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--- FEATURES ---

Medical Trends and Morals ..... **W. H. Prioleau**
Capillary Fragility ..... **G. J. Martin**
Hyaline Membrane ..... **E. K. Aycock**
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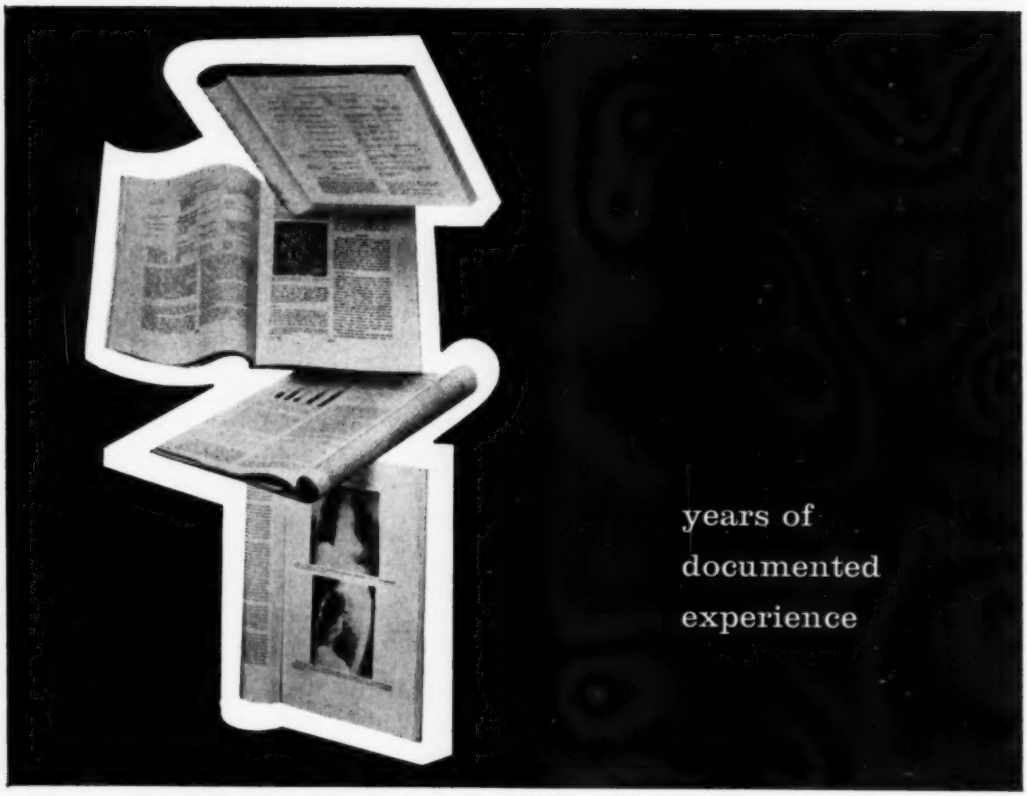

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THE JOURNAL OF THE SOUTH CAROLINA MEDICAL ASSOCIATION—Published monthly by The South Carolina Medical Association, 105 West Cheves Street, Florence, South Carolina. Subscription Price: $3.00 a Year. Entered as second-class matter February 9, 1916, at the post office at Greenville, South Carolina, under Act of March 3, 1879. Accepted for mailing at special rate of postage provided for in Sec. 1103 Act of October 3, 1917, authorized Aug. 2, 1918.

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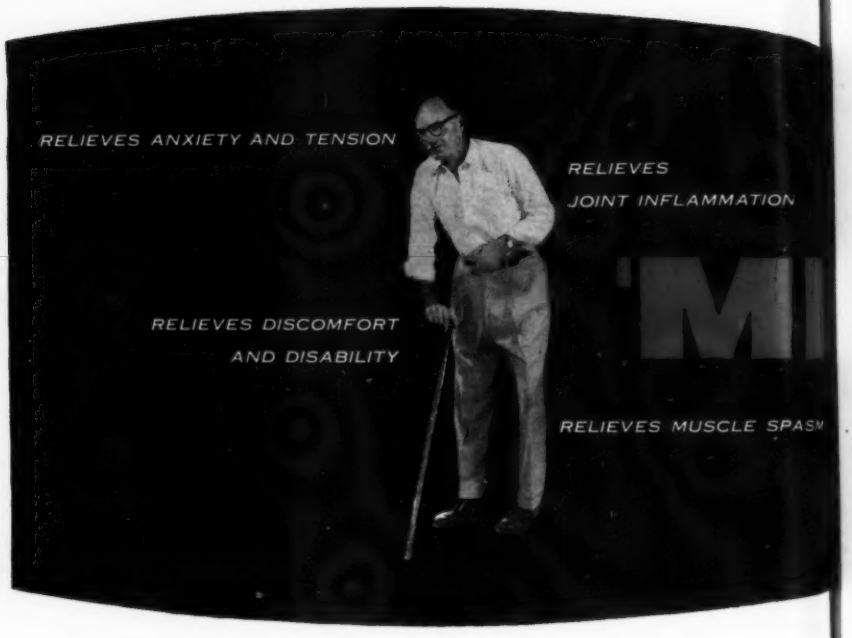

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MEDICAL TRENDS AND MORALS

PRESIDENT'S ADDRESS

WILLIAM H. PRIOLEAU, M. D.
Charleston, S. C.

Medicine is playing an increasingly important part in the life of an average citizen, as an individual citizen on account of advances in science resulting in improved medical care, and as a taxpayer on account of the large appropriations for medical institutions. Only a few decades ago, in the care of the average patient there was little required other than the services of the physician, prescriptions compounded by a pharmacist and simple home nursing. Now, almost routinely, there are needed ancillary services of various kinds, drugs which can be prepared only by large pharmaceutical houses, and often the facilities of a well equipped hospital. The cost of medical care has mounted so that the average citizen cannot pay for a serious illness other than on an insurance basis.

Formerly the physician occupied an exalted place in the community on account of his learning and the dedicated nature of his calling. Now with higher education so general in many other fields the medical profession no longer occupies its previously unique position. The exalted nature of its calling remains the same, and the medical profession will continue to be held high in public esteem as long as it keeps faith with its ideals.

While the principles of medical ethics have not changed, their field of application has become much broader. It is no longer sufficient that the physician conduct his practice in an ethical manner, but in addition it is necessary that the profession as a whole assume responsibility for the conduct of the various organizations and institutions which function in the name of medicine. These must also subscribe to the ideals of medicine. The worthiness of their purpose does not justify any deviation for the sake of expediency. Their professional relationships should conform to the generally accepted code. Their dealings with the public must be above reproach. Their accomplishments redound to the credit of medicine and to the good of humanity, while unsound organizational or institutional practices cast a reflection upon the medical profession and are harmful to public interests.

The American public is informed and intelligent, and it expects to be dealt with accordingly. Organizations, in making appeal for public support and financial backing, should clearly state their nature and their purpose. Unduly extravagant claims should not be made. False hopes must not be raised; if cures are mentioned, failures should be given proportionate consideration. The appeal is too often upon an emotional rather than a factual basis. The result is that some organizations raise funds out of proportion to the function they fulfill, while some equally worthy ones suffer. Hospitals have been guilty of permitting their names to be used in return for a percentage of proceeds in promoting schemes not related to medicine but primarily for some other purpose. Medical advisers to these organiza-

tions should review the material of the promotion agencies before it is put before the public. Giving false impressions and misinformation must be carefully avoided.

Medical colleges are undergoing an expansion necessitated by advances in science and changes in teaching methods. Graduate work in the nature of residency training, research work, a nursing school on a college level, and provision for training technicians in various fields are now established functions of a modern medical school. The fulltime system is constantly being extended to the clinical departments so as to correlate the various activities and make teaching more effective. An increasingly important function of a modern medical college is to act as a referral center for the care of patients who require skills and facilities which, for economic and other reasons, are not available in their community hospitals.

Indigent patients formerly served adequately for undergraduate teaching and residency training. Now it is necessary to use private patients more and more, as the indigent patients, who are preferable for most teaching purposes and indispensable for residency training, have been reduced in number by the great increase in voluntary health insurance and the expansion of federal and state agency programs. Due to the change in teaching methods, the marked decrease in the number of indigent patients, the natural limitations upon the use of private patients and the increase in the student body and resident staff it is necessary that a much greater number of patients be available.

The cost of this expanded program has presented a serious problem. In private institutions the income from endowments has been most inadequate. In state colleges the legislatures do not always meet budget requirements. Annual roll calls and the Medical Education Foundation have been of some assistance. In most instances additional dependable sources of income are necessary to meet the requirements of a modern educational institution.

To fill the need of additional patients and increased income, medical colleges are turning increasingly to the field of medical care. From an educational standpoint this is a natural and sound policy. It is the economic factor which has been the source of difficulties. There have arisen problems of a professional nature as well as some upon an institutional level. In some parts of the country they have been of such proportion as to cause professional schism. Recognition of this was taken by the House of Delegates of the A.M.A. and resolutions were passed with the purpose of resolving the difficulties. Fortunately, in South Carolina we are in the early stages of our expansion program. We can learn from the mistakes of others and take measures to avoid them.

The Medical College of South Carolina can be considered the capstone of medicine in the state. It supplies physicians, and personnel in the ancillary services. It makes available within its borders skills and facilities not commonly found in community hospitals. It serves as a natural source of reference in difficult problems. It acts as a healthy stimulus and its general effect is to raise the standard of medical care. In practice it can be considered the alma mater of every physician in the state.

While the Medical College serves the practicing physicians, it in turn is dependent upon them. Their utilization of its services is necessary for it to develop to full fruition. With such interdependence the problems of the Medical College become those of the profession. They must be solved to the mutual interest of both. To accomplish this a close liaison is necessary on both a state and local level. Practices and policies should be reviewed carefully by representative committees. The profession should recognize the needs of the Medical College and should not subject it to hampering restrictions. Since it is a state institution, the college's professional and economic policy, both within its walls and toward the profession should be such as to avoid any just ground for professional and institutional differences. Any compromise for the sake of expediency would be extremely shortsighted. The good will and support of the general profession are necessary for a healthy development of the Medical College so that it can serve the state to best advantage.

The public must be made to realize that medical education is expensive. The Medical

College should receive adequate support from the state, thus avoiding the problems connected with obtaining income from professional fees and entering the field of medical care properly that of the community hospital. This would insure healthy profession relationships and permit it to serve best the interests of the people of the state. The education of the public to the necessity of adequate support of the Medical College is a responsibility of the profession which should be gladly assumed. We should work for a medical school so firmly established that it leads not only in the science of medicine but can openly oppose legislation inimical to public welfare and take the proper place of an educational institution in promoting practices and policies conducive to the best medical care of the people of the state.

Social and economic changes throughout the country in the past few decades have had corresponding effect upon the practice of medicine. We are still in an inflationary spiral. Credit generally is used to the limit permitted by the government. The standards of living are rising. The average family budget cannot take care of the cost of a serious illness. About ten years ago there was a great demand for socialized medicine. Prepaid health insurance was recognized as the only way of meeting the situation, but the premiums were high and the coverage inadequate. The development of the Blue Shield concept was an important factor in preserving the private practice of medicine. Through it physicians offered to the people a full coverage service at a price they could afford to pay. Both physicians and patients benefited. Blue Shield and commercial health insurance have increased phenomenally and are still doing so. Not long ago the patient with insurance coverage was the exception; now the reverse is the case. Today the average patient expects his illness to be covered by his insurance. The Blue Shield contract calls for full coverage. Well planned commercial insurance generally serves the same purpose, but to the discredit of the medical profession the charge has been made that not infrequently the possession of indemnity insurance represents a liability when the physician makes out his bill. Health insurance must be extended so as to include a greater number of people and to give a more complete coverage. There is a great need for so-called catastrophic insurance to cover prolonged illness. It is hoped that this can be met by Blue Shield, Blue Cross, and commercial insurance so as to avoid government entering the field. The recently announced Dread Disease coverage available to Blue Shield subscribers is an important step in this direction. Health insurance must keep pace with social and economic changes.

Medical fees are becoming more uniform. This results from the great increase in health insurance and predetermined fees in ever increasing industrial contracts and government sponsored programs, such as Vocational Rehabilitation and Medicare, which likely soon will include the aged, the blind and the permanently disabled. An important factor is the increasing acceptance of the concept of the relative value fee schedule, which has been developed particularly in California. This was used by many state associations in negotiating the fee schedule for Medicare with representatives of the federal government. It has recently been adopted by Blue Shield in South Carolina. It can be stated that predetermined fees are necessary for those segments of the population which can cover their medical expenses only by prepaid insurance; on this basis alone is it possible for insurers to determine their risks and the insured to know the value of his policy.

The variable fee plan is applicable to a constantly decreasing proportion of the population, but it still occupies an important place in the economics of medicine, on the one hand by permitting the physician to take into consideration the inability of some patients to pay the customary fee and on the other in providing an incentive to the physician to excel in a particular field and to be properly remunerated for his services when financial conditions permit. It must not be overlooked that the variable fee plan carries with it the danger of abuse; exorbitant fees charged by some few physicians constitute a discredit to the whole profession.

The nature of the practice of medicine is undergoing constant change. The physician in the small town is no longer isolated. Meet-

ings and post-graduate courses are readily available, and often arranged so that the physician can attend them without disrupting his practice. In most instances, hospital facilities are within reasonable distance. Consultants and medical centers are available for cases requiring special skills and facilities. The physician of today is called upon to attend a greater number of patients. To accomplish this he uses freely ancillary services and auxiliary personnel. There is a growing tendency toward partnership and small group practice. When properly conducted this has advantages for both physicians and patients. While the average physician keeps well abreast of progress in the science of medicine, and in this respect is a credit to his profession, it is important that he take greater interest in professional relationships, and in the changing social and economic conditions affecting the distribution of his services. The solution of these problems should not be left to any other particular group or organization.

The physician must adapt himself to the changing status of the nursing profession. The present day nurse is being trained for supervisory and teaching duties and functions requiring a combination of special skill and responsibility. Much of the work formerly done by her is now delegated to auxiliary personnel under her supervision. To date, facilities for training this personnel are very limited and most inadequate. The responsibility for a training program has not been assumed by the organized nursing profession or by the medical schools. For the most part hospitals have had to resort to "on the job training". Hospitals are experiencing increasing difficulty in obtaining nursing coverage for the evening and night shifts and over week-ends and holidays. The adjustment to these changes is proving difficult, and is being only slowly accomplished.

The South Carolina Medical Association occupies a position of importance in the state in affairs concerning the health of the people. The South Carolina Medical Association together with the Attorney General and the Comptroller General constitute the State Board of Health. Its members on the Executive Committee are nominated by the House of Delegates and appointed by the governor; likewise on the State Board of Medical Examiners, which has charge of the licensing of physicians. The South Carolina Medical Association appoints representatives on committees which direct the expenditure of funds appropriated by the state, as well as matching federal funds, for the various health agencies. The responsibility vested in the South Carolina Medical Association carries with it a corresponding obligation.

The South Carolina Medical Association represents the physicians of the state. Its particular province is the field of ethics, policy, and public relations. The profession looks to it for guidance and leadership in matters pertaining to the profession. An important function of the State Association is to guard against the development of unhealthy practices within the profession. These must be recognized early before they become real problems. The State Association has no specific means to deal with such problems, but depends upon the fact that disapproval or censure is not looked upon lightly by individual physicians or medical organizations.

The South Carolina Medical Association has an obligation to the public to promote general medical welfare and, in particular, to protect it from selfish interests of various groups and the profession as a whole. This requires constant vigilance as social and economic changes are continually taking place, and they bring with them unexpected and vexing problems in medical affairs. Physicians individually and collectively must be conversant with them if we are to preserve the present physician-patient relationship which is fundamental to proper medical care. The profession must take leadership in maintaining a system of practice in accordance with the best medical traditions, otherwise the result will not be to their liking or to the welfare of the public. Our efforts along these lines are properly and most effectively expressed through a strong South Carolina Medical Association.

THERAPY IN CAPILLARY FRAGILITY

GUSTAV J. MARTIN
Philadelphia, Pa.

Deductive exactitude has become the ruling logic of the modern scientific, medical world. The concept is created and then scrutinized by all the methodology available. If the concept parallels in detail the reality, then it passes into the sphere of the theory and can become within the limits of probability a pillar for future thought. It is with this objective in mind that I should like to briefly outline the concept of biological relativity and then pass to a consideration of the capillary and its correlated factors and molecules. The latter are in fact a minute phase of the greater structure.

Biological Relativity.

The theory of biological relativity has eight main propositions. We will concern ourselves with but one of these. It states "the absence of absolutes in biological systems—there are no 100% specificities".

If biological relativity is a fundamental law of nature there should be striking differences within phylogenetic groupings and these differences should render impossible the ultimate achievement of the dream of Paul Ehrlich, the "magic bullet". Statistical probabilities should dictate that no medicinal chemical would ever have 100 per cent specificity and, equally, that no individual should be precisely like another in reaction to any given chemical agent.

Roger Williams (1953) has given detailed consideration to the problem in his book "Free and Unequal". This fine work is a generalization of the principle that all individuals are genetically possessed of certain biological characteristics and that the pattern of these is not parallel in any two persons.

In the world of medicine and medicinal chemistry, both from the standpoint of the educational system and from that of the textbooks of the field, there has been an unfortunate establishment of the "patient". This mythical "patient" was uniform; his responses were standard and static; he paralleled his brothers in all things. Any consideration given to inherent variability has been put into fine print and relegated to obscure positions. Yet, it is the variability that is the heart of medical practice and the very foundation of medicinal chemistry. Without the variability there could be no biology, no medicine, and certainly no medicinal chemistry.

As in the field of biology, so in the world of pharmacology and chemotherapy, there can be no 100 per cent specificities. Each and every molecule must possess multiple valence. Each and every patient will react differently to all facets of the multiple valence. It is even possible that each and every bacterium or other microorganism will react differently to each of the multiple activities of any given chemotherapeutic agent.

Capillary Therapeutics.

Application of the concept of biological relativity to the capillary and to those agents controlling capillary permeability and fragility dictates that there will be tremendous variation in the capillaries from individual to individual and that there will be but a relative specificity among the agents controlling the functioning of these vessels from the standpoint of permeability and fragility.

The role played by the capillary is highlighted by the fact that the total capillary wall area of a 50 kgm. sample of the voluntary muscle of a man is roughly 6,300 square meters. This is an area equivalent in dimension to 7,497 square yards and to 68,040 square feet and is equal in length to 100,000 km. or two and one-half times around the globe. This vast ocean of capillaries provides the working barrier separating the blood from the cellular elements and tissues. Across the walls of the

Research Laboratories, The National Drug Company, Philadelphia, Pa.

capillary must pass all life giving ingredients found in the blood, whether of gaseous, ionic, or molecular magnitudes. Life depends upon the integrity of the capillary tree.

The capillary bed cannot be considered static, as with all aspects of the structure of living things it is dynamic. Only a portion of the capillaries is open at one and the same time; the resting tissue shows but a few open capillaries, the number increasing in direct proportion to the activity of the tissue.

There are three structural components of the capillary wall (Zweifach, 1955) and of these the most important is the endothelial layer with its intercellular cementing substance. The permeability constant of the cement substance would for a comparable area exceed by a factor of four that for the cellular elements. Any slight change in the nature of the cement will enormously affect the permeability of the capillary wall and hence the diffusion across this wall of all life giving elements.

On the inner surface of the endothelium there is a thin, non-cellular lining, the so-called "endocapillary layer", which is nothing more or less than a film of blood proteins adsorbed to the vessel wall.

There is a third constituent of the capillary wall: the pericapillary sheath which envelops and supports the endothelial tube on its outer surface. This is a structure made of fine fibrils derived from the surrounding connective tissue, and embedded in a gel-like matrix. When a patient suffers from scurvy, or vitamin C deficiency, it is the supportive power of this pericapillary sheath which is primarily weakened, leading to rupture of the capillary walls and to the consequent minute hemorrhages which you find when vitamin C is lacking.

From these aspects,—the magnitude of the capillary tree, its dynamic functional qualities, and the significance of the intercellular substance and the pericapillary sheath—one is caused to marvel at the importance to the body of proper control of this "cement of life".

Ascorbic Acid and Flavonoids

Such control is exerted by ascorbic acid and by the flavonoids. The mechanism by which the flavonoids exert their influence on permeability and capillary fragility has been investigated extensively and it has been found that these compounds are capable of potentiation of ascorbic acid (synergistic action), modification of the effects of histamine, and prevention of the oxidation of epinephrine.

It is to be expected that compounds of a flavonoid structure should manifest a relatively high degree of biological activity (inhibitory activity against specific enzymes). The chemical nature of the flavonoid molecule, containing, as it does, reactive hydroxyl and carbonyl substituents, would suggest such activity.

Despite these actions on specific enzyme systems, the main interest in the bioflavonoids stems from their effects on capillary permeability and fragility. Historically, the prominence of this field of investigation dates from 1936, with the isolation from the peels of citrus fruit by Szent-Gyorgyi and coworkers of a material which they called "citrin". (Armentano et al., 1936). They showed that this material consisted of a mixture of flavonoids and had the property of reducing capillary fragility and permeability. Bruckner and Szent-Gyorgyi, in 1936, showed that the active principle in citrin was hesperidin. Since that time, similar activity has been reported for a number of flavonoid compounds, including rutin, (Griffith et al., 1944) esculin, and its aglycone esculetin, (Lavollay, 1945) and catechin and its epimers, (Lavollay et al., 1943). In short, such activity appears to extend to flavones, flavonols, and flavanones as well as to structurally similar compounds, whether combined with carbohydrate or in the aglycone form.

The mechanism by which the flavonoids exert their influence on permeability and capillary fragility has been extensively investigated, and various workers have postulated their interaction with different metabolites and enzyme systems linked to regulation of permeability. The first step in this direction came from Bentsath and Szent-Gyorgyi, who reported in 1937 that traces of ascorbic acid were required for citrin activity. Since that time, a great deal of evidence has been adduced to support the idea of a relationship between the flavonoids and ascorbic acid.

In 1947, Beiler and Martin postulated that the physiological effects of the flavonoids were

due at least in part to an action on hyaluronidase. These workers showed a marked synergistic action of these compounds with ascorbic acid on the enzyme *in vitro*. This is particularly interesting in view of the original observation of Bentsath and Szent-Gyorgyi that ascorbic acid was required for flavonoid action in the body.

Martin and his co-workers (1947) found that the synergism between the flavonoids and ascorbic acid could also be demonstrated in the body. Using the technique of Ambrose and DeEds (1947) they found that the inhibitory effect of hesperidin methyl chalcone on experimentally-induced increase in capillary permeability was markedly potentiated by addition of ascorbic acid. The same synergistic effect was obtained on inhibition of intracutaneous dye spreading, thus providing a direct link with hyaluronidase action in the body.

In view of the effects of epinephrine on vascular permeability, and the fact that polyphenols are known to act as epinephrine antoxidants (Bacq, 1936) it is not surprising that some workers have attempted to explain the effects of the flavonoids on permeability and fragility by postulating a potentiation of epinephrine action.

I suppose that any discussion of permeability might be considered incomplete without reference to histamine at some point. It is true that there is evidence in the literature linking the action of the flavonoids to histamine. Parrot and Richet, in 1945, showed that scorbutogenic diets enhanced histamine toxicity in guinea pigs, and that this enhancement was prevented by catechin epimers. Torii, in 1943, had shown that a soluble hesperidin compound would reduce the toxicity of histamine in normal animals. Wilson and his co-workers, in 1947, reported the same effect with rutin, although this finding was not confirmed by Raiman and his co-workers in the same year.

A number of the flavonoid compounds have been found to prevent anaphylactic shock. Antianaphylactic effects were reported for soluble hesperidin derivatives by Hiramatsu in 1941 and by Fujihara in 1942; for rutin, by Raiman and his co-workers in 1947; for catechin, by Moss, Beiler and Martin in 1950; and for quercetin, by Thiele and Schuchardt in 1952. Several authors have failed to confirm these results, e.g. Roth and Shepperd, in 1948, and Arbesman and Neter, in 1949. It is quite possible that these negative results were a function of the experimental conditions employed, since Martin and his group found that pretreatment of the animals with flavonoid for a considerable period of time was necessary to obtain the antianaphylactic action.

Martin and his co-workers, in 1949, found that flavonoid compounds were effective inhibitors of histidine decarboxylase *in vitro*, and postulated that they exerted their antianaphylactic effect by preventing the formation of histamine through inhibition of this enzyme. Ascorbic acid was found to be synergistic with the flavonoids in this system. (See Table I).

TABLE I

(1) Direct effect on the capillaries
(2) Potentiation of action of ascorbic acid
(3) Inhibition of hyaluronidase
(4) Inhibition of histamine
  (a) Direct antihistaminic action
  (b) Inhibition of release of histamine
  (c) Inhibition of formation of histamine
(5) Inhibition of epinephrine oxidation
(6) Action on bleeding and coagulation time

I have attempted to consider briefly some of the physiological actions of the flavonoids, particularly as regards their effects on the vascular system. Table I summarizes the explanations which have been advanced to account for these effects. Certainly, at the present time, no single mechanism can be pointed to as being the correct one and, indeed, it would appear that a series of interrelated actions would be the most logical means of accounting for the profound physiological actions of the flavonoids.

The anatomical and physiological importance of the capillary is directly correlated with the biochemical basis of action of the bioflavonoids and in turn with that of ascorbic acid. These factors then form the background for the clinical application of ascorbic acid and hesperidin combinations.

Drugs and Capillaries

Two kinds of drugs are now available for maintenance of the capillaries or their restoration to normal strength. The first, the bioflavonoids, I will discuss in some detail in just a minute; they have been in clinical use for a number of years and have undergone much investigation. The second drug used in capillary bleeding has been in use for a relatively short time. It is a derivative of epinephrine, adrenochrome - monosemicarbazone - sodium-salicylate - complex. The pharmaceutical history of this drug is interesting in that adrenochrome, a substance with some hemostatic properties, was lying around on pharmacologists' shelves for years, too unstable to be useful. Eventually someone figured out a semicarbazone derivative of adrenochrome which did retain its stability. There was only one hitch: now the substance was not soluble enough for practical use. To overcome this hurdle, the molecule was complexed with sodium salicylate and is now commercially available. Only a few clinical reports on this substance have appeared to date, some good and some bad, as usual. Apparently it is fairly safe to use, but not very effective by the oral route. (Bacala, 1956; Anon., 1956; Riddle, 1955).

You have all heard much of the bioflavonoids, because these drugs at the present time are undergoing one of those periodical over-the - counter - common - cold - cure campaigns, which recalls to mind the great invasion of a few years back by the anti-histaminics. Those, too, are perfectly good pharmaceutical agents, successfully used today; but they are not panaceas and they do not cure the common cold.

The beneficial effect of flavonoids on patients with increased capillary fragility and permeability was first noted by Nobel Prize winner Dr. Albert Szent-Gyorgyi and his associates in 1936, who extracted them initially as "citrin" from red peppers and lemon juice. These workers coined the name vitamin P when it was found that their flavone glycoside inhibited the permeability of capillaries to proteins; they also noted its effectiveness as a cure for vascular purpura while observing a lack of activity against the thrombocytopenic forms of the disease (Armentano et al., 1936).

Since those pioneering days it has been found repeatedly that the bioflavonoids can increase the lowered resistance of the capillary wall to the application of pressure, i.e., that these drugs can restore to normal a state of capillary fragility. This was shown in the late 1930's by a considerable number of clinical studies (reviewed by Lindheimer and associates in 1942). Subsequent reports continued the trend toward confirmation of the original results, although controversy was not lacking. In particular, it became questionable whether the capillary-active "Vitamin P" substances had indeed true vitamin activity, or whether theirs was chiefly a vitamin C sparing, or potentiating effect. Finally, it was asked whether their distinct physiological action might not be based on a mechanism not primarily connected with vitamin metabolism.

At present the bioflavonoids are not considered vitamins as such, since they have not been shown unequivocally to be essential dietary constituents, but we may categorize them—and in fact, we use them—as "vitamin synergists".

The bioflavonoids improve and, in some cases, cure various different diseases which are not superficially related except that they all have the common denominator of capillary fragility. For instance, among the indications for bioflavonoids published in the recent literature, you will find both poliomyelitis and diabetes—two clinical entities totally different from each other—yet in both conditions the respective clinicians were faced with capillary faults: petechial hemorrhages in the one, and retinopathy in the other. In both diseases the bioflavonoid hesperidin with vitamin C is said to have given favorable results in respect to the capillary fragility encountered (Boines, 1955; Radnot and Sipos, 1950).

If the clinical condition is one in which capillary fragility is a distinct possibility, the bioflavonoids are available for the patient in three roles: as the indicated therapeutic agents, as an adjunct to treatment and finally also as prophylactic substances, wherever capillary impairment may be expected. As a guide for the clinical use of bioflavonoids there has appeared in the recent medical

literature a body of knowledge which is based on empirical clinical evidence regarding the efficacy of these agents in various specific diseases. These are primarily conditions in which the release of serous proteins and of blood corpuscles either through pores of the intercellular cement or due to rupture of the capillary walls plays a significant role; in other words, diseases involving fragility and heightened permeability.

Bioflavonoid Therapy

The list of diseases for which bioflavonoid therapy has been indicated tells us the clinical conditions in which doctors have been sufficiently impressed by the bioflavonoids' effectiveness to publish a recommendation for their use; it does not tell us which are the better and which are the less certain indications; but, aside from my evaluation, and aside from your own as you read the literature, you must naturally expect some variations in effectiveness even within a group of patients suffering from the same disease. For example, diabetic retinopathy may give a good response to bioflavonoid therapy *if you catch it early enough*. In the later cases, scarred with extensive retinal hemorrhage of long standing, not much help can be gained with these drugs and none should be expected (Beardwood and Trueman, 1953).

In both hypertension and diabetes the reversal of capillary fragility with bioflavonoids has been widely applied. From Germany, for instance, Schmidt et al. (1950) reported 15 out of 16 hypertensives, who showed increased capillary fragility by the Gothlin test, to have achieved normalization of capillary resistance with 6-9 weeks of bioflavonoid therapy. No new retinal hemorrhages were observed.

Another application of bioflavonoids much praised by European authors is their use in the prevention of sensitivity reactions due to antibiotics. According to Buchholz (1955), combined penicillin-sulfanilamide medication for a prolonged period induces increased hemorrhagic diathesis, leading to post-operative bleeding and hematomatas. Bioflavonoid-containing tablets were used to prevent these conditions.

In pregnancy, too, clinicians have used bioflavonoids with good results. Particular attention has been paid to patients established as habitual aborters. Greenblatt (1953) was impressed with the presence of ecchymotic areas resulting from minor trauma in many of his patients who were habitual aborters, and found that over 80% showed evidence of abnormal capillary fragility. Thus, bioflavonoid and ascorbic acid treatment resulted in a pronounced decrease in capillary fragility.

Bioflavonoids are being used increasingly not only in naturally occurring purpuras, but pre- and post-operatively. In Goldman's paper, for example (1956), citrus bioflavonoids were given to 530 tonsillectomy patients with good results. Patients received bioflavonoids for 6-8 days pre-operatively and 4 days post-operatively. There was noted some slight decrease in initial bleeding, but a distinct decrease in subsequent oozing. The effect was more pronounced in capillaries than in regard to large vessels.

Bioflavonoids and Colds

In the respiratory diseases we must distinguish between such applications as tuberculosis, where bioflavonoids have been highly recommended by the European workers as adjuncts to regular anti-tubercular drugs, and the common cold, for instance.

If a patient comes in sniffling with a cold, according to the present state of knowledge, there is no evidence that a capsule of hesperidin, or any other bioflavonoid, will cure him. Until we learn a little more about this general subject—and right now virology is truly making great strides ahead—until we get more data, I cannot see much chance of preventing the activity of the cold virus which has you literally by the throat by the time you start tightening of capillaries.

If the patient is disposed to colds and you are planning long-term preventive medication, and there is a spirit of patience, forbearance, and not too exaggerated hope on the part of both physician and patient, the theoretical possibility exists that the strengthened capillaries resulting from such a course of action may affect adversely the spread of viruses through the system. This matter of preventive medicine with bioflavonoids in respiratory dis-

eases is at present under investigation. A few promising and hopeful papers have already appeared, but we have to wait and see. The assembling of statistics in the field of respiratory diseases is fraught with a particularly large number of pitfalls, because the variables of subjective impression—e.g., as regards sneezing, feeling of stuffiness, definition of a real cold-spell, etc., play such a distressingly great role.

From the clinical results reported, it is our contention that there is no diseased state in which the capillaries are not detrimentally modified and conversely that there are no diseased states which will not benefit by assuring proper capillary strength and integrity. While the clinical evidence is not sufficiently extensive to have established this contention, the indications are strongly in favor of its validity. Specifically, the use of hesperidin and ascorbic acid is indicated in habitual abortion, rheumatic fever, rheumatoid arthritis, diabetes and diabetic retinopathy, and hypertension. In all of these conditions there is a common factor, failing capillaries. The use of hesperidin and ascorbic acid in clinical states opens a new field of medicine related directly to an anatomical system, to the capillary tree. No suggestion is made or implied that other approaches to the treatment of any given disease be abandoned or replaced by hesperidin and ascorbic acid but the contention is made that this combination benefits every clinical entity in which it has been tried. It is to be regarded as supplemental therapy of value in virtually all diseased states and specific in action with respect to some.

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THE ETIOLOGY AND PATHOGENESIS OF

PULMONARY HYALINE MEMBRANE DISEASE

A REVIEW OF THE RECENT LITERATURE

E. KENNETH AYCOCK, M. D.

Pulmonary hyaline membrance in infants was first described in this country by Johnson and Meyers in 1925.[1] They were unable to reproduce this membrane in experimental animals.

Before considering the various theories which have been advanced as to the etiology of pulmonary hyaline membrane disease, there are several points which should be elucidated. First, pulmonary hyaline membranes do not occur exclusively in newborn infants, but may also be observed in adults.[1] Whether these two membranes are identical is a moot question, but the majority of opinions favor the membranes found in adults and infants as being two different histo-chemical membranes.[2,3,4] Second, pulmonary hyaline membrane disease has the following pathological characteristics: (a) atelectasis, (b) vascular engorgement, and (c) an eosinophilic hyaline membrane.[3] Third, pulmonary hyaline membrane is found predominantly in premature infants,[4,5,6] in infants born by cesarian section, and in infants born of diabetic mothers.[4,5,6,7,8] Fourth, the membrane is not found in infants who die within the first few hours after birth, and not all infants with clinical symptoms of this condition succumb.[4] The minimal life span necessary to produce the membrane has been found to be from one and a half hours in pre matures to a longer time in full-term infants, the critical time for full-term infants being the second to third day of life.[9] Fifth, although the hyaline, acidophilic material lining the alveolar ducts has been reproduced by several methods, both in vivo and in vitro, Arey[2] felt that the overall pattern as seen in the newborn, *i.e.* extensive atelectasis associated with large hyaline membranes, has not been reproduced by any means. However, in a recent report on the experimental production of hyaline membrane by the introduction of amniotic fluid and plasma into the lungs of guinea pigs Stevenson[10] was able to produce the entire triad of pathological findings, but not in all of the experimental animals.

The cause of hyaline membranes is not known. The laboratory offers us no conclusive proof. We know only that it is a clinical and pathologic entity limited in its time of origin to the first few hours after birth and with a maximum total duration of less than four days. This leads us to believe that its origin must lie in something affecting the fetus before birth, in some anatomic or physiologic changes occurring coincidentally with the establishment of an extrauterine existence, or in some condition to which the infant is exposed immediately after birth.

Of the numerous articles which have been published on the nature of the membrane, most seem to agree that it is composed largely of a protein substance. With regard to the origin of the protein, there are two schools of thought: The first that the protein is exogenous: *i.e.* amniotic fluid and the second that the protein is endogenous: *i.e.* derived from the infant's blood stream, or a pulmonary exudate.

Since the lungs of fetuses are known to contain differing amounts of debris derived from the amniotic fluid, it has been postulated that the membranes are composed of this debris and that the membrane was found in those infants who have been stimulated to breath excessively before birth.[5,11,12] However, the lack of squamous cells in the lungs of infants

Pediatric Department, Medical Center Hospitals, Charleston, S. C.

with hyaline membrane disease has been offered as evidence against the theory that the membrane is derived from amniotic fluid. The work of Landing and Smith,[13] proved somewhat the contrary. As is known, hyaline membranes occur chiefly in premature infants. From their work, Landing and Smith showed that the squamous cell content of amniotic fluid is low in early pregnancy, rising sharply in the last trimester. The peak incidence of the membrane occurs before the rise of the squamous cells in the amniotic fluid. Therefore, they reasoned that the relative lack of squamous cells in the lungs of infants with hyaline membrane disease is not good evidence against the aspiration theory.

The Aspiration Theory

Recent work in favor of the aspiration theory is that previously cited by Stevenson and Laufe in which they produced hyaline membrane in guinea pigs by the introduction of amniotic fluid. From this experimental data they concluded that (a) the newborn aspirates the amniotic fluid, (b) the lung exudes a high protein fluid as a result of vagal injury, (c) amniotic fluid speeds clotting of the exudate, (d) clots of exudate produces atelectasis, and (e) atelectasis results in anoxia which in turn results in death.[10]

Still further evidence in favor of the aspiration theory is work by Stevenson and Laufe[14] in which they reported experiments in which they injected various proportions of both human plasma and amniotic fluid into the trachea of adult guinea pigs. Ten of these pigs who had had both plasma and amniotic fluid developed pulmonary hyaline membrane disease (both symptoms and characteristic pathological findings as have been previously described). However, not all of the guinea pigs who had had various combinations of the fluid and human plasma developed hyaline membrane disease. They concluded that in general, amniotic fluid, irrespective of the amount of vernix caseosa, produced excessive atelectasis and pulmonary vascular engorgement. Human plasma produced pulmonary edema and hemorrhage. These workers felt that both amniotic fluid and plasma exudate were necessary for the formation of the pulmonary hyaline membrane. In addition they surmised that the thromboplastin-like activity of the amniotic fluid aided in the clotting of the exudate to form a hyaline membrane, thereby explaining the necessary time factor essential for the formation of the hyaline membrane.

As to the possible etiology of the pulmonary exudate Stevenson and Laufe postulated the following: (1) the exudate was from pulmonary irritation due to amniotic fluid; (2) from pulmonary irritation due to high concentration of oxygen; (3) from vagus nerve injury with resultant excessive secretion of fluid possibly of increased consistency, and (4) from high progesterone environment of the premature infant which in some way causes an increase in pulmonary exudate.

Anoxia has been offered as the common denominator in the development of hyaline membrane. Arey[2] and Reutter[9] feel that intrauterine anoxia results in capillary damage and this capillary damage in turn allows the escape of protein with the formation of a membrane. Or, as Arey further stated, anoxia may possibly lead to the aspiration of amniotic fluid.

Other Theories

Other possible etiological factors which have been advanced are as follows: (1) The weak cough and gag reflex of the newborn infant accounts for the aspiration of amniotic fluid.[15] (2) The membrane is a response to infection,[3,4,15] and (3) The hormones influence the lung permeability, a theory advanced by Chappel,[17] who offers the following thoughts on the possible effects of hormones on lung permeability: The estrogen level of the mother's blood is low during the first half of gestation and rises during the second four and one-half months. The progesterone level follows the estrogen level, but is slightly lower until 24 hours prior to delivery when the progesterone level falls to zero. Estrogen causes muscle tone and diminishes permeability. Progesterone acts as a muscle relaxant and causes the accumulation of fluid. The fetus has been lying in this amniotic medium of high hormone concentration and must be influenced by it. Delivery by cesarian section, before labor has begun, presents a different hormonal stimulation, as does

premature labor, and the response in the fetus is often strikingly different.

Still another interesting theory in favor of an exogeneous source is that offered by Wagner,[18] who postulated from his biochemical and histological findings that the membrane in infants is derived from the nasopharynx, buccal cavity, and bronchial tree of infants; in other words the infants aspirate their own juices.

Gruenwald's[19] theory is that the formation of hyaline membrane is due to post-natal edema fluid. He reasoned that as fluid is not present in the lungs at the time of the birth of infants who later developed hyaline membrane disease, as determined by clinical observation, the symptoms of respiratory distress which appear later represent fluid in the lungs, *i.e.* post-natal edema fluid.

Quite a number of authors since 1953 have stated that more work should be directed toward finding out the actual composition of the membrane. Lynch and Mellor,[20] in a recent experiment in which they studied the composition of the membrane by the application of Lepehne-Pickworth and "Nadi" technique to frozen sections and material freshly fixed with formalin, arrived at the conclusion that while they were unable to identify the substance in the membrane, they felt that their work demonstrated that the hyaline membrane represents a concentration of excessive secretion of the epithelial cells of the respiratory bronchioles and alveolar ducts. In addition they found that the unrespired lungs were low in "Nadi" and Lepehne-Pickworth substance and therefore they felt that oxygen was needed for activation or secretion of the substance. This necessity for oxygen, they felt, explained why hyaline membrane did not develop within approximately one hour after birth.

Concerning the endogenous source for the protein which forms the hyaline membrane, a great number of recent experimental studies have been directed towards the part played by high concentrations of oxygen, and the role of the vagus nerve in the formation of pulmonary edema.

Role of Oxygen

The experimental production of hyaline membrane by the exposure of animals to high concentrations of oxygen has been established by Bruns and Shields,[21] who were able to produce membranes in guinea pigs subjected to 90% oxygen. In a recent article, Lynch *et al*[22] showed that they could produce hyaline membrane in the lungs of guinea pigs and white rats by using high exposure of oxygen. The exposure of the animals to high concentrations of oxygen caused an alteration in the blood pH to acidotic levels. They also demonstrated a hemoglobin-like hemochromogen in the hyaline membrane itself. The source of this heme or iron-porphyrin-protein they were unable to clarify at that time; however, they suggested two possibilities of origin: (1) that the heme in the membrane is derived from diffuse extravasation of red blood cells and hemolysis of these, or (2) that the alternative source of the heme is the epithelial cells of the respiratory bronchioles and alveolar ducts, in which cells they proved heme to be present. Their work further indicated that all pulmonary "edema" fluid contained organic iron in evenly dispersed form. The authors seemed convinced that "edema" always preceded membrane formation, which is a terminal phenomenon produced by expanding gas bubbles plastering the material against the walls of the alveoli and walls of the alveolar ducts, with concentration of material by the drying effect of respiration and possible also by fluid absorption through the alveolar walls.

Influence Of Heart Failure

As to the etiology of the pulmonary "edema" or exudate, Lendrum[23] advanced the theory that acute left heart failure in these infants produced pulmonary exudate, which in turn formed the hyaline membrane. Lendrum stated that in many cases of hyaline membrane disease the eosinophilic precipitation is neither "hyaline" nor "membrane". He felt that the infant with pulmonary hyaline membrane disease presents the following picture: (a) increasing dyspnea and cyanosis, (b) dilation of the right side of the heart and especially of the right atrium, (c) congestion of the lungs with extreme capillary engorgement, (d) resorption atelectasis, (e) pulmonary edema, and (f) albuminous fluid in the alveolar ducts. All these findings would sug-

gest heart failure with overloading mainly of the pulmonary circuit, *i.e.* left heart failure.

Heart failure as the possible cause of pulmonary hyaline membrane disease was first offered by Winter and Gellis in 1953, but they dismissed it because of the lack of peripheral edema, enlarged liver, and lack of congestion of the systemic veins in infants who died with hyaline membrane disease. Lendrum does not feel that the previously mentioned findings need be present to have acute left heart failure. Acute left heart failure in the new born infant, he believes is due to two things. First, the change in circulatory dynamics which occurs at birth, brought about by: (a) decreased venous blood volume, result of discontinued placental flow; (b) decreased right atrial pressure; (c) decreased right ventricular pressure caused by increased pulmonary capillary bed; and (d) increased left atrial and left ventricular pressure. Second, the inability of the heart of the premature baby to cope with the change in dynamics, since the development of the pulmonary vascular bed is barely adequate for extrauterine life, and the muscular wall of the left ventricle and ductus arteriosus are incompletely developed. Their failure to function properly results in an increased load on the pulmonary circuit.

To account for the actual formation of the hyaline membrane from the pulmonary exudate which results from acute left heart failure due to the causes stated, Lendrum offers the following explanation. The newborn lung has amazing ability to absorb and remove water, as shown by experiments. Water and electrolytes are absorbed more readily than protein and therefore this state results in an increased concentration of protein in the remaining fluid. This concentrated protein is forced toward the alveolar ducts and bronchioles by the contraction of the alveolar walls. Lendrum states that there is no true membrane as such in life and that the membrane is formed in the process of fixation for staining. Atelectasis of the lung is accomplished by the reopening of fetal channels and by the amazing ability of the right ventricle to function under anaerobic conditions.

Vagal Influence

For some tme interest has been directed to the role of the vagus nerve in the production of hyaline membrane in the lungs. It has been shown that bilateral vagotomy produces a great deal of pulmonary edema, and, in a few cases, hyaline membranes in rabbits.[15] It was also noted that the respiration of animals with bilateral vagotomy was similar to that of infants who later developed hyaline membrane disease: namely, more diaphragmatic and less intercostal breathing.

In the recent experiments by Lynch *et al*[24] in which some animals were exposed to continuous high oxygen concentrations and other animals had bilateral vagotomy, it appeared that both the natural and the experimental oxygen and vagotomy varieties of hyaline membrane basically have a common etiology, labeled as secondary shock. The initiating factor appeared to be a disturbance or abolition of the afferent vagal chemoreceptor impulses from the lungs due to the drastic fall in blood pH and the elevation in serum potassium and inorganic phosphate. This sudden change in pulmonary vascular dynamics, and the sudden left heart failure and cerebral trauma are the cause of acute pulmonary edema. The authors consider that the vagal fibers to the lungs are of prime importance in the genesis of the disease. Alterations or disturbances of the vagal fibers to the lung relax the bronchi with the resulting development of acute emphysema, which in turn leads to pulmonary capillary atonic dilatation. Next there follows left heart strain, then flagging of the left heart, and terminally there is failure of the whole myocardium because of neurally conditioned electrolyte and fuel loss from the muscle, which may be a result of low potassium within the muscle cell.

As a result of pulmonary capillary damage and cardiac failure, blood plasma and anoxic red cells escape into the alveoli, where the red blood cells are rapidly hemolyzed and mixed with the plasma "edema" fluid and account for the iron-prophyrin protein membrane.

Summary

Pulmonary hyaline membrane disease is characterized clinically by respiratory distress which becomes progressively worse until death. These clinical findings of respiratory

distress have been likened to heart failure, (acute left ventricular failure.)

There seems to be a necessary time interval between birth and death for the hyaline membrane to be formed.

Morphologically the lesion is characterized (a) atelectasis, (b) vascular engorgement, and (c) an eosinophilic hyaline membrane.

As to the character of the membrane there is general agreement that it is protein in nature, and recent experimental evidence seems to indicate that the hyaline-like substance is due to the presence of an iron-porphyrine protein. There is also recent evidence which tends to prove that the membrane contains epithelial cells.

The question of the source of the protein which forms the substance of the membrane is still not settled; however, the evidence in favor of the endogenous origin of the protein seems to outweigh rather substantially the evidence of its solely exogenous origin.

The following have been offered as being necessary to activate the formation of the protein substance or the pulmonary exudate: (a) amniotic fluid, (b) anoxia, (c) hormonal influence, (d) acute left heart failure, (e) high concentrations of oxygen, and (f) disturbance of the vagus nerve.

Numerous recent reports on experimentally-produced hyaline membrane disease seem to prove that high concentrations of oxygen have a definite part in the formation of the membrane.

The encompassing work done by Lynch *et al* [24] in demonstrating the part played by oxygen, the vagus nerve, and left heart failure in the formation of hyaline membrane disease is most convincing.

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A CLINICAL TRIAL OF SIGMAMYCIN

IN 50 CASES OF GENERAL SURGICAL INFECTIONS

WENDELL M. LEVI, JR., M. D. AND FREDERICK E. KREDEL, M. D.
Charleston, S. C.

Introduction

The combination of oleandomycin with tetracycline, as represented by Sigmamycin*, has shown evidence of synergistic activity.[1] It was felt that a clinical trial was indicated.

Oleandomycin is a mono-basic antibiotic formed by a strain of Streptomyces antibioticus grown in organic media under submerged aerobic conditions. It is readily differentiated from other basic antibiotics by paper chromatography, infra-red spectra, ultra-violet absorption spectra, acid stability, and chemical degradation products.[2] This antibiotic has similarities with erythromycin and carbomycin but apparently does not have significant cross resistance with any of the commercially available antibiotics.[3] Its activity is principally against Gram-positive organisms, including many of those resistant to older antibiotics.

Previous clinical trials and laboratory sensitivity studies with Sigmamycin have shown considerable effectiveness in infections due to organisms resistant to other antibiotics.[4,5]

Methods

Fifty non-selected cases of general surgical infections, were treated both as hospital and clinic patients. The drug was administered in capsules of 300 mgm. and of 250 mgm., given orally every six hours, and in some instances one capsule every four hours. The 300 mgm. capsules contained 100 mgm. of oleandomycin and 200 mgm. of tetracycline. The 250 mgm. capsules contained oleandomycin and tetracycline in the same ratio. Most of the patients were treated for four to five days or until an adequate response was obtained. Cultures and sensitivities were taken when possible.

Results

Fifty cases of general surgical infections were treated. This included 29 cases of cellulitis, with or without abscess formation. There were ten cases of wound infections, and six cases of patients treated post-operatively because of contaminated wounds. Three cases of acute suppurative or acute gangrenous appendicitis, one infected burn, and one patient with pharyngitis and upper respiratory infection were treated in a similar manner.

Significant cultures were obtained in 20 cases, with 14 cases of virulent staphylococcus aureus, two cases of alpha hemolytic streptococcus and four cases of beta hemolytic streptococcus. In the 14 staphylococcic infections there was only one case which failed to respond to Sigmamycin. This was a case of osteomyelitis of the great toe, secondary to phlegmasia cereulea dolens. This patient had been treated previously with penicillin-streptomycin and erythromycin for approximately two weeks with persistent drainage and positive culture. Incision and drainage with sequestrectomy was performed and the patient placed upon Sigmamycin for approximately 14 days. There was still persistent drainage and a positive culture at the end of this time. There was a poor response in one patient with alpha hemolytic streptococcus infection. This patient had a rather severe pharyngitis and upper respiratory infection with a temperature of 100°. After approximately four days treatment the patient continued to have slight fever and pharyngitis and the drug was discontinued. Of the four cases of beta hemolytic streptococcic in-

Dr. Levi is Assistant Surgical Resident, Medical Center Hospitals, Charleston.
Dr. Kredel is Professor of Surgery, Medical College of South Carolina.

*Sigmamycin supplied by the Pfizer Co.

fections there was only one case which did not respond completely to Sigmamycin. This was a case of cellulitis and abscess secondary to a laceration of the leg. Incision and drainage were performed, and the patient was treated for approximately seven days with Sigmamycin (250 mgm. capsules), with disappearance of the cellulitis and a good febrile response, but with some persistent drainage.

In two cases penicillin and Gantrisin had been administered for two and four days with no response. These showed a very good response and ultimate cure after being placed on Sigmamycin. One of these was a patient with cellulitis of the hand secondary to a laceration. He had been treated for two days with penicillin and Gantrisin in the usual dosages with no clinical response. After four days treatment with Sigmamycin (250 mgm. capsules) the patient showed resolution of the cellulitis and complete cure. The second case was a patient with a large carbuncle of the back from which we obtained a pure culture of staphylococcus aureus. She was treated for approximately four days with penicillin and Gantrisin after incision and drainage, with no response. She was placed upon Sigmamycin (250 mgm. capsules) and in four days there was resolution of all inflammatory reaction.

There were no significant side effects other than slight diarrhea in two cases, and one case of moderate diarrhea. Two of these cases were treated for four days and one for six days before the diarrhea developed. This diarrhea rapidly disappeared after the discontinuance of the drug.

Discussion

Sigmamycin in dosages of 300 and 250 mgm. every four to six hours appears to be effective in the treatment of most general surgical infections, including virulent staphylococcus aureus infections. In some cases these infections had been clinically resistant to other antibiotics. The drug is apparently well tolerated. The fact that a satisfactory cure was obtained in 13 out of 14 cases of virulent staphylococcus aureus infections is very encouraging.

Summary

Fifty cases of general surgical infections treated with Sigmamycin are reported. An effective cure was obtained in all but three cases. The drug seems very effective in staphylococcic infections. It is well tolerated with only very minimal side effects. Further clinical trials are advocated.

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Pulmonary Tumors in Mice Exposed to Asbestos Dust. Lynch, Kenneth M., McIver, Forde A. and Cain, James R. A.M.A. Arch. Indust. Health 15:207, March 1957.

Since the first report of the occurrence of carcinoma of the lung in association with asbestosis was published by Lynch and Smith in 1935, the senior author has continued clinical and autopsy studies on the subject. Others have also been interested in the question, and the literature now contains at least 127 cases of association of the two conditions. For the past several years the National Cancer Institute has supported an experimental study by the senior author, with whom the other two authors have been associated in parts of the investigation. The present report concerns the use of a special strain of mice, exposed to asbestos dust, and while mainly negative it bears upon the features of experimental asbestosis and records the appearance of more primary tumors of the lung in the dusted animals than in the controls.

MEDICAL COLLEGE CLINICS

THE MEDICAL COLLEGE OF SOUTH CAROLINA

ELECTROCARDIOGRAM OF THE MONTH

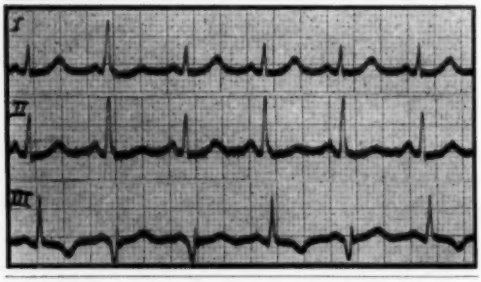
WOLFF-PARKINSON-WHITE SYNDROME

DALE GROOM, M. D.
Department of Medicine

Case Record—The electrocardiogram below was recorded on a 50 year old married lady who complained of several attacks of dyspnea associated with a feeling of constriction in the chest. These attacks all began and ended abruptly, lasted from about ten to twenty minutes, and on one occasion awakened her during sleep. No other history suggestive of cardiovascular disease was acknowledged and the symptoms described had been experienced only during the few acute episodes which had come on spontaneously and without warning during the previous two years.

A complete cardiac examination revealed no abnormalities except for those illustrated in the electrocardiogram.

Electrocardiogram—Both the atrial and ventricular rhythms are entirely regular at a rate of 98. Two distinctly different types of cardiac cycles are seen with a tendency to alternation: one has a P-R interval measuring 0.16 sec. with a QRS of 0.06 sec., and in the other these measurements are both approximately 0.10 sec. Differences in configuration of the QRS complexes and their associated T waves are also evident in all leads, showing most distinctly in lead III. The complete electrocardiogram was otherwise unremarkable.



Discussion—The conduction of impulses from the atria through the atrioventricular node and into the ventricles is subject to numerous variations, many of which are of definitely pathological significance. One particular type of A-V conduction anomaly occurring in presumably healthy young people was described by Wolff, Parkinson and White in 1930 and has become known as the *"syndrome of short P-R interval with abnormal QRS complexes and paroxysmal tachycardia"*, or, simply, the "WPW syndrome". In this the P-R interval is shortened to 0.10 sec. or less and the QRS complex is widened proportionately, measuring from about 0.10 sec. to as much as 0.20 sec. in some cases. Generally the P-J interval (sum of the P-R and QRS) is not prolonged as it is in bundle branch block where a duration of 0.26 sec. or more is the rule. In other words, the P-R is shortened by about the same amount as the QRS is widened in WPW complexes, whereas in bundle branch block the QRS is widened without an associated decrease in the preceding P-R interval. Both tend to show a slurring or notching of QRS complexes but this is characteristically seen in the initial deflections (i.e., the first upstroke or downstroke) in the anomalously conducted beats of the WPW syndrome. Of special interest is the fact that subjects with this peculiarity of conduction may show the characteristic electrocardiographic complexes either as isolated beats interspersed with normally conducted beats, or throughout the tracing, or in a more or less regularly recurring sequence such as alternation of the two types of beats. Sometimes several tracings must be taken before one of the anomalous complexes is recorded.

Normally a delay occurs between the end of atrial systole and the beginning of ventricular systole. Conduction of the impulse through the A-V node is not immediate but is delayed a period of time corresponding with the interval between the end of the P wave and the beginning of the QRS. In WPW syndrome the ventricular musculature is somehow activated early; the normal A-V delay does not occur in these beats. Furthermore the ventricles are activated in a different way as shown by the marked differences which occur in the QRS complexes and T waves. A widely accepted explanation of this postulates that the impulse is "short circuited" around the A-V node through an anomalous band of conduction tissue (the bundle of Kent) which reputedly has been demonstrated at autopsy in some subjects who showed the Wolff-Parkinson-White syndrome. Recently another theory has been advanced contending that the A-V node itself, rather than an accessory conduction pathway, is the site of the short circuit and that in these subjects the impulse is *accelerated* in conduction through a portion of the node stimulating prematurely part of the ventricular musculature. In either case the anomalously conducted impulse is followed immediately by the normally delayed impulse, producing in effect a dual stimulation of the ventricles. And since these

two stimuli do not come at the same moment the total depolarization time of the ventricles is prolonged, giving the widened QRS. It is the initial stimulation, whether it be due to accelerated or aberrant conduction, which accounts for the characteristic slurring or notching—the so-called "delta waves"—in the initial deflections of the QRS.

The mechanism whereby paroxysmal tachycardia is produced in this syndrome is uncertain. However, the existence of a second conduction pathway between the atria and the ventricles, by whatever route, conceivably might predispose to a circus type of movement in the atria set up by retrograde conduction from below. Tracings recorded during paroxysms of rapid heart action reveal these tachycardias to be of the supraventricular type.

Several clinical features of the syndrome are of particular interest. Quinidine effectively abolishes the anomalous conduction. Conversely digitalis, and sometimes atropine or carotid sinus stimulation, will increase the number of WPW complexes. Therefore quinidine is the drug of choice for the treatment of this type of paroxysmal tachycardia, rather than digitalis which might actually perpetuate the arrhythmia. Other than the predisposition to attacks of paroxysmal tachycardia, which are said to occur in about 70% of individuals whose electrocardiograms show this type of anomalous conduction at some time, the WPW syndrome is not generally considered to denote heart disease. Most likely it represents a congenital anomaly of A-V conduction. Nevertheless, life insurance statistics have indicated that these cases are not standard risks. Instances of sudden death, perhaps attributable to the associated paroxysmal tachycardia, have been reported.

Diagnosis of WPW syndrome is entirely an electrocardiographic one. Its recognition is important, as in this case, in evaluation of symptoms which were undoubtedly produced by a recurrent tachycardia. Furthermore the electrocardiographic changes produced by this anomally must often be differentiated from those of bundle branch block, myocardial infarction and ventricular hypertrophy. For example, the deep wide Q waves seen here in the accelerated conduction complexes of lead III might easily be misconstrued as evidence of posterior wall infarction were it not for the normal beats which are interspersed. On the other hand, serious heart disease, including myocardial infarction, can be masked by the presence of a WPW pattern which persists throughout the tracing. In either case quinidine may be administered to suppress the anomalous mechanism for a more complete electrocardiographic diagnosis.

BILATERAL POLYCYSTIC OVARIES
STEIN-LEVENTHAL SYNDROME

E. J. Dennis, M. D. and J. A. Salley, M. D.
Department of Obstetrics

A 20 year old nulligravid colored female, was seen in the Endocrine Division of the gynecological outpatient department with chief complaint of abnormal irregular menstruation. She has been followed intermittently with these complaints for the past two years. Since menarche at age 14, the patient had frequent delays in menstruation of two to six weeks duration followed by heavy, profuse bleeding of eight to ten days duration. In September, 1955, she was admitted to the hospital for profuse menorrhagia following two weeks delay in menstruation and at this time dilatation and curettage were performed. Pathological study revealed endometrial tissue, proliferative phase, with a moderate degree of hyperplasia. Following this dilatation and curettage, her menses remained irregular, usually with a delay of three to four weeks, and then menorrhagia. She was given cyclic hormonal therapy of estrogen and progesterone in July, 1956, and August, 1956, following a period of three months amenorrhea, and profuse menorrhagia. Hormonal therapy did not control her bleeding and she was again admitted for dilatation and curettage. Again, a report of proliferative phase endometrium with endometrial hyperplasia was obtained.

At examination in the Endocrine clinic and under anesthesia at both curettage procedures, the right ovary was described as enlarged to approximately twice normal size. The left ovary was questionably enlarged. Since the last operation, the patient had been followed in the Endocrine clinic with amenorrhea for as long as three months followed by bleeding. The enlarged ovary was noted on several occasions and cyclic hormone therapy was ineffective in controlling this patient's menstrual cycle. Since at this stage involuntary sterility had existed for five years, she requested that her fertility be investigated.

There was no history of hirsutism, inflammatory disease of the pelvis, breast changes, or abnormal weight gain. Review of systems was essentially negative.

The patient was a well-developed, well-nourished colored female in no distress. BP 115/75. Pulse 75 per minute. There was no facial hirsutism of remarkable degree except for a small amount of fine hair on the upper lip.

The external genitalia were normal. The pubic hair was of female distribution. The vagina and cervix were clean. The cervix was nulliparous. The uterus was of normal size and in 1st degree retroversion. Both ovaries were palpable and were judged to be twice normal size.

Because of the episodes of menorrhagia occurring

after amenorrhea of three to four months duration, the persistent ovarian enlargement, and involuntary sterility, a presumptive diagnosis of Stein-Leventhal syndrome was entertained. A culdescopic examination was done without difficulty and showed a normal uterus and fallopian tubes. Both ovaries were enlarged, the right to a size of 4 cm. and the left to 2.5 cm. The surface of each was pale without any stigmata of ovulation.

On February 20, 1957, under general anesthesia, dilatation and curettage and colpotomy were performed. The culdescopic impression of Stein-Leventhal ovaries was confirmed by direct visualization but attempt at wedge resection via the vaginal approach was unsuccessful. Therefore, the colpotomy incision was closed and laparotomy was performed with bilateral wedge resection of the ovaries. The findings at laparotomy were the same as those described at culdescopic examination.

The post-operative condition of the patient was uncomplicated and she was discharged on the seventh post-operative day.

Final pathological diagnosis: perioophoritis, chronic, with pericapsular fibrosis of ovaries (Stein-Leventhal syndrome). Each of these wedge shaped portions of tissue seemed to have a thickened capsule and beneath the capsule multiple small follicles. (Fig. 1)

FIGURE 1

Sections of these ovaries showed rather stout fibrous adhesions on the surface and in addition the peripheral cortical areas show a dense, cartilaginous and relatively acellular zone. This gives the impression of a sclerotic cap surrounding the ovarian tissue. More or less uniformly distributed at the same depth beneath this sclerotic area are numerous ova and follicles in various stages of maturation. (Fig. 2)

FIGURE 2

Discussion

In 1935, Stein and Leventhal called attention to a syndrome characterized by amenorrhea and sterility accompanied by pelvic findings of bilateral ovarian enlargement.

The etiology of this interesting syndrome remains obscure. Pituitary dysfunction has been considered the probable cause by some investigators. Others attempt to incriminate the adrenals, but use of cortisone in treatment has produced no results. The fact that success occurs only in those cases in which wedge resection of the ovaries is done would seem to place the primary dysfunction in this organ.

Since the original description, other ramifications in symptomatology have become apparent. While amenorrhea is the usual abnormality, metrorrhagia and menometrorrhagia occur frequently as in this case. Amenorrhea may persist for from three to four months and be followed by persistent, profuse vaginal bleeding. Since ovulation does not occur, sterility is the rule.

Hirsutism is another symptom which is an aid in diagnosis. It most commonly involves the face, breast, and abdomen. On occasions it may be the presenting symptom, but usually it is minimal and has to be carefully searched for.

A few patients have enlargement of the clitoris and a still smaller proportion have underdeveloped breasts. Obesity is frequently present and is excessive in 50%.

Intermittent lower abdominal pain occurs in some cases and occasionally is the presenting symptom.

The 17-ketosteroid excretion is usually normal (6-12 mgm. in 24 hours). If the excretion is elevated, further investigation of adrenal activity is indicated.

Obviously, detection of bilateral ovarian enlargement on pelvic examination may be difficult since obesity is frequently present. Culdescopy offers a distinct advantage in those cases as well as being confirmatory in patients in whom the enlargement can be felt.

At culdescopy, the ovaries are enlarged and cystic with a thick white capsule, and without any stigmata of ovulation. Pathologically, the capsule of the ovary is thickened and fibrotic. On section, there are numerous follicular cysts of all sizes. Microscopically, the granulosa layer is usually scanty, with abundant theca interva cells, which frequently appear to be luteinized.

Diagnosis rests on the history, realizing that prolonged amenorrhea is not an absolute prerequisite, and the findings of bilateral ovarian enlargement. The latter may cause some difficulty in an obese patient, but culdescopy and culpotomy should be relied on to establish the diagnosis. Laparotomy should not be used except in an occasional extreme case.

Treatment is wedge resection of from 25 to 60% of the ovarian tissue bilaterally with suture of the remaining ovarian tissue. Simple biopsy is not effective. Efficiency of therapy may be judged by the occurence of regular ovulatory menstrual cycles.

Summary

1. A case report of bilateral polycystic ovaries (Stein-Leventhal syndrome) is presented.
2. Diagnosis is made on the history and physical findings of bilateral ovarian enlargement, the latter being the sine qua non in establishing the diagnosis.
3. Treatment consists of adequate wedge resection of ovaries.

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Traumatic Urinary Injuries: Pitfalls in Their Diagnosis and Treatment. Kenneth M. Lynch, Jr. (Charleston) J.Urol . 77:90, Jan. 1957.

The present concepts of the diagnosis and management of urinary tract injuries are briefly reviewed. Several case histories illustrating certain pitfalls in the diagnosis and treatment of such injuries are presented.

Definitive diagnosis should be made of the location and severity of injury to the urinary tract. This is suggested in renal injury by the plain x-ray film showing loss of renal and psoas shadows, and by the excretory urogram which will show diminished or absent function when performed early and which may show extravasation of the excreted medium when performed later than several days following the injury; retrograde pyelography will delineate the degree of renal injury whether performed immediately or several days later. In bladder injury, proper diagnosis is made by the retrograde opaque cystogram. In urethral injury, correct diagnosis is made by failure of a urethral catheter to pass or by the extravasation of medium on an opaque urethrogram or cystogram. Bleeding from the urethra, independent of urination, should suggest injury of the urethra distal to the external sphincter. Inability to urinate may be due to injury of either the urethra or bladder.

Treatment of the injury, as established, should be by the choice of the attending urologist according to his personal opinions as formed from reports in the literature and his personal experience. No dictum is made for the acceptance of the classifications and recommendations of any particular investigator.

Careful followup examinations should be made of all injured kidneys for the possible development of atrophy, hypertension, calculus formation, perirenal abscess and perirenal cyst. Pelouze was probably the first to call attention to this when he stated that "where a palliative course has been pursued with seeming success, it is well to make a study of the comparative functional values of the two kidneys a year or so after recovery, for later complete cessation of function of the injured kidney is not altogether rare."

It is suggested that an attempt be made on a regional level to inform the general practitioner and general surgeon in the diagnosis and treatment of urinary tract injuries, particularly in localities where no qualified urological consultation and treatment are available. It is further suggested that the care of such injuries should always be in the hands of the urologist in such places as he may be available.

PRESIDENT'S PAGE

It is with a deep sense of pride and responsibility that I accept the presidency of the South Carolina Medical Association. Since early childhood I have thought of the medical profession as one of man's highest callings and the achievement of its ideal a goal in life. Of the many endeavors in this world I know of none that can better fulfill and satisfy a man than to feel that his efforts have been the means of making others enjoy more comfortable and happier lives.

When the physicians of this State banded together to further their ideals the first action was an expression of *PURPOSE*. Let us now examine our State Association's Constitution phrase by phrase and take stock of Article II, "*PURPOSES OF THE ASSOCIATION.*"

"To federate and bring into one compact organization the entire medical profession of the State of South Carolina, and to unite with similar Associations in other States to form the American Medical Association."

This objective has been realized to the extent of 1,358 members of 1,773 physicians in our State. Let's recruit the remaining 400 through the County Medical Societies.

"To extend medical knowledge and advance medical science."

This is being done. Let's keep the needs of our medical college in mind. Let's work for and contribute to the National Fund for Medical Education.

"To elevate the standards of medical education."

Let's see that the present high standards are maintained.

"To secure the enactment and enforcement of just medical laws."

Let's keep a strong judiciary committee as we now have and support the A.M.A. department in Washington.

"To promote friendly intercourse among physicians."

Let's continue to have well attended meetings at all levels.

"To protect them (physicians) against imposition."

Let's continue our battle against socialization in our support of the A. M. A.

"To enlighten and direct public opinion in regard to the great problems of medical care."

Let's encourage the Auxiliary in the showing of the film "DANGER AT ITS SOURCE."

"To become more capable and honorable within itself."

Let's continue to support post-graduate education by all groups.

"To become more useful in the prevention and cure of disease, and in prolonging and adding comfort to life."

Let's preserve ourselves so that we might be capable of fulfilling the avowed purposes expressed in our Constitution.

Lesesne Smith

Editorials

PARTNERSHIP PRACTICE OF MEDICINE

"Counsel in the heart of man is like deep water; but a man of understanding draweth it out."

What man stands more frequently or more urgently in need of counsel than a physician? When we conceive of counsel as deliberating together, consulting, mutually advising, then every busy physician will admit that very often, indeed almost daily, there arises need for such counsel.

After an experience of over forty years, we would like to recommend partnership practice of medicine as a very satisfactory way of automatically providing this daily counsel.

The counsel thus provided is more often than not informal, and at times may be even subtle, occurring almost by osmosis, as it were, but it is nevertheless effective, and provides that assurance which is often needed in treating seriously ill patients.

But besides these instinctive exchanges of counsel the rewards of a medical partnership are many. One of the most highly valuable rewards is that spirit of comradeship that develops and grows with the passing years.

Another rewarding aspect of the partnership practice is the patients' appreciation of the consultative service without extra cost. Further obvious advantages that accrue to members of a medical partnership are the increased opportunities afforded for attending medical meetings and for taking post-graduate study. Likewise, vacations and time-off duty may be more surely and satisfactorily arranged by the members of a medical partnership than by physicians working alone, and, too, the sharing of expenses in providing the ancillary phases of medical practice is an important item and one that appeals to most men.

The most far-reaching value of medical partnership is the opportunity that this pattern of practice provides for projecting ones tenure of service. To accomplish this, of course, new and younger men need to be added to the firm as older men retire. Retirement need not be fixed by the number of birthdays alone, but may also be related to the value of the service one may be able to render. The service may often be that counsel which is like deep water in the heart of man, and the drawing out of this deep water may depend on the understanding of all the members of the firm rather than the oracular powers of any single member. This counseling is always a two-way stream. There is some mutual passing of encouragement and advice.

If the values of the partnership practice are so numerous and so varied, why is it that this pattern of practice is comparably rare? Our opinion about this would be that it was the partners and not the partnership, that had been the cause of failure in many cases, but we have noticed with a great deal of satisfaction that in the past decade or so medical partnerships are becoming increasingly popular. In our own case, the partners have usually been automatically provided by family ties. However, this is not at all a necessary requirement, for men of kindred spirit may practice congenially and harmoniously when there are no blood ties to bind. We know from our own experience that this is true. We, therefore, recommend especially to the young men in our profession that they consider the advantages of partnership practice of medicine.

J. R. Young and C. H. Young

NEW YORK SESQUICENTENNIAL

February marked the beginning of the one hundred and fiftieth year of continuous operation of the Medical Society of the State of New York. The special February issue of the *New York State Journal of Medicine* contains an interesting account of the Society's development and activities and of the medical men and institutions vitally concerned in its growth and present status.

There was a medical society in existence in New York City as early as 1749, which apparently fell into inactivity, but was re-

organized after the Revolution as a county society known as The Medical Society of the State of New York, which actually comprised in its membership only the physicians of New York City. This society yielded its title to the present state organization in 1806. There was also another organization, the Physic Society, which was active before 1806.

The analogy with the growth of our South Carolina Medical Association is obvious. Our forerunners were a rather obscure "Faculty of Physic", existing in 1755, and later the Medical Society of South Carolina (founded 1789) which was in effect a Charleston County organization, and which was active in promoting the formation of a state association in 1848. For certain legal reasons the old Society retained its name and still exists, but the name is often confused with that of the South Carolina Medical Association.

The New York Society is thus more than forty years older than we are, and has a roster of many more distinguished members than we have. South Carolina is happy to wish it well, to congratulate it on its high achievements, and to work alongside of it to further our common interest in striving to promote the progress of medicine.

"M.D." NEWSMAGAZINE

The most ambitious of a number of free publications which bring news of medical events appeared in January in the form of *M.D.*, a monthly magazine which is distributed without charge to 150,000 physicians in the United States and its possessions. The format is that of several well-known news weeklies, and the style of expression follows closely the modern journalese of those magazines. The latter can be taken or left as one chooses.

The material is well selected and its presentation is unusually good. Subjects cover a great range of interests which include or touch medicine, medicine in sports, hospitals, the press, religion, music, art, theater, books, and many others. The articles appear to be accurate and are presented in very readable form.

M.D. is an excellent magazine which can be read practically from cover to cover (including the necessary advertising). It has set a high standard in its first few issues, and should enjoy a continued medical popularity.

DR. D. LESESNE SMITH

Dr. Daniel Lesesne Smith assumed the presidency of the South Carolina Medical Association at the meeting at Myrtle Beach in 1957. Thirty years ago his father, Dr. Daniel Lesesne Smith also became president of the Association. The Journal has noted before that there have been a number of instances in which sons of ex-presidents of the Association have followed their fathers into the presidential chair. This sort of succession speaks well for the stability of medical interest in the state and for the tradition of medicine in a number of South Carolina families.

Most of our members will recall the personality and achievements of Dr. Smith, Sr. They will remember his successful accomplishment in building up the Infants and Children's Sanatorium at Saluda and the development of the Southern Pediatric Seminar there. The seminar continues to provide fine post-gradu-

ate instruction to many of our members in this state and physicians elsewhere. Dr. Smith was a charter member of the American Academy of Pediatrics, he was chairman of the Section on Pediatrics of the Southern Medical Association in 1932, and president of this association in 1927. His memory will live on in the achievements of his medical family.

NATIONAL LIBRARY OF MEDICINE

A board of regents has been nominated by President Eisenhower to guide the new National Library of Medicine. Ten eminent persons representing the fields of medicine, dentistry, pharmaceutical production, history of medicine, and library science have been named on a staggered committee which includes *ex officio* heads of the governmental medical services and the Librarian of Congress.

The importance of this library can not be overemphasized. It is probably now the greatest medical library of the world, and its care and its growth are imperative. Congress has authorized a new building, which is needed badly, but has failed to make necessary appropriation. Next year a request will be made to Congress for funds, but as 1958 will mark the fortieth anniversary of the earliest formal effort to obtain new housing, it remains to be seen whether this most essential construction will be made possible.

A word from each of us to our representatives in Washington would be a great help to the cause.

OH PRICELESS PRICE

Since Dr. Julian Price of Florence vacated the editorial chair of this journal a few years ago, he has achieved many honors and established a high place for himself in the field of organized medicine. He has served on various important committees of the American Medical Association and carries on his duties as trustee. His various activities are almost too numerous to mention. Now there comes to him another responsibility inasmuch as he has been selected as one member of a seven-member group of physicians who are to act as the Public Health Service Advisory Committee on medical practice relations. The committee has been selected by the Surgeon-General, Leroy E. Burney, to advise him on public health service activities related to the practice of medicine.

Dr. Price is a fitting representative. He has been and is in active practice and is familiar with all facets of the problems which might need solution in connection with public health service activities. At the moment, there seems to be no end to the possibilities which may entail more and more activities by Dr. Price, and there seems to be no reason why he cannot fulfill any requirements which might come along.

FIRST SOUTH CAROLINA CONFERENCE ON HANDICAPPED CHILDREN

The First South Carolina Conference on Handicapped Children was held on March 5 - 6, 1957 at the Columbia Hotel, Columbia, South Carolina. The Conference was sponsored by the Inter-Departmental Committee of State Agencies concerned with the welfare of children and youth, and the Nemours Foundation, Wilmington, Delaware. The Nemours Foundation, which gave financial support for this conference is a charitable corporation for the advancement of work with the handicapped child, and was made possible by the will of Mr. Alfred I du Pont. Because of the financial support of the Nemours Foundation the Conference was able to obtain outstanding speakers from over the country.

The objectives of the conference were given as follows by Mr. Arthur B. Rivers, General Conference Chairman.

1. Review the programs, services and facilities now available in the State for meeting the needs of handicapped children.

2. Consider these programs, services and facilities which should be developed in order to meet these needs more adequately.

3. Develop the understanding, interest and support necessary to attainment of the goals which the conference may formulate.

The Conference was opened by Dr. Shands who gave "The Nemours Foundation and Its

Program of Conferences in Southern States".

He was followed by Kenneth Rogers, M. D., Assistant Professor of Maternal and Child Health, and Assistant Professor of Pediatrics, University of Pittsburgh, who spoke on the "Needs of the Whole Child".

Harold Williams, Ph.D., of Department of Health, Education and Welfare, Washington, spoke on "Meeting the Needs of Handicapped Children Through Special Education".

George M. Deaver, M. D., Institute of Physical Medicine and Rehabilitation, New York University, spoke on "Physical Medicine and Rehabilitation".

The Conference brought together over 400 people in the State, deeply interested in handicapped children, and for the first time the directors of the official agencies presented simultaneously the services and unmet needs of their respective agencies.

Reports were heard from the South Carolina State Board of Health, the South Carolina Department of Welfare, South Carolina Department of Education, the South Carolina Mental Health Commission, and from the group of state-supported institutions. There were also reports of the voluntary agencies of the state. The Junior League Speech and Hearing School, The Columbia Hearing Society, The Greenville Hearing Society, and several voluntary agencies interested in crippled children, such as the Crippled Children's Society of South Carolina, the Foundation for Infantile Paralysis, the Shriners' Hospital. There were also reports from the South Carolina Heart Association, the South Carolina Cancer Society, the Association for Mental Health, the Association for Retarded Children, and the Tuberculosis Association.

Great interest was manifested in this type of conference and Dr. John Siegling, at the close of the meeting introduced a resolution which was unanimously carried: that the participants in the program go on record as favoring the establishment of a permanent coordinating Council on services for Handicapped Children and the Steering Committee for this conference be empowered to establish such a permanent Council.

It is hoped that Conferences on Handicapped Children can be held annually.

The Nemours Foundation is printing the proceedings of this conference and copies will be distributed to those who registered at the Conference. Also it will be distributed to those who are definitely interested and will make a request to Dr. Hilla Sheriff, M. D., Director, Maternal and Child Health Division, S. C. State Board of Health, Columbia, S. C., by May 1, 1957.

NEWS

Dr. E. R. Wallace, III has been elected president of the Barnwell County Medical Society.

Other officers named are Dr. A. D. Gantt of Williston, vice president, and Dr. L. M. Mace of Barnwell was re-elected secretary-treasurer.

Dr. C. C. Freeman of Williston was president of the organization in 1956.

Dr. A. M. Robinson has been named campaign chairman of the Richland County unit of the South Carolina Division, Inc., American Cancer Society.

On February 19th, in a brief ceremony Dr. John K. Webb, Greenville, received a gavel and the title of president of the Tri-State Medical Association of the Carolinas and Virginia. He replaced Dr. Roy B. McKnight, Charlotte, N. C.

Among the new officers are Dr. J. E. Crosland, Greenville, vice president for South Carolina; Dr. C. S. McCants, Winnsboro, councilor for South Carolina.

Among the six hold-over councilors are Dr. W. H. Powe, Greenville, Dr. George Bunch, Jr., Columbia; and Dr. I. R. Wilson, Jr., Charleston.

Dr. Gertrude Holmes, Dr. John Latham and Dr. Williard Mills participated in a panel discussion on "Changing Aspects in Allergy" at the regular meeting of the Greenville County Medical Society.

A discussion of medical testimony by a panel of widely known doctors and lawyers featured a joint meeting at Rock Hill of the Medical Association of the Fifth Congressional District and the bar of the Sixth Judicial Circuit.

Attending the joint meeting from Lancaster were Glenn Yarborough and Ned Gregory, attorneys; and Dr. S. R. Barber, Dr. R. L. Crawford, Dr. J. C. Harris, Dr. Louis G. Llewelyn and Dr. DeBert W. Connell.

Moderator for the discussion was Joseph R. Moss of York, a justice of the South Carolina Supreme Court.

Attorney members of the panel included David W. Robinson, president of the State Bar Association; S.

Augustus Black and J. Means McFadden of Columbia; and John M. Spratt of York.

Doctors on the panel were Dr. H. R. Pratt-Thomas and Dr. Harold S. Pettit, members of the faculty of the South Carolina Medical College; Dr. William S. Hall, superintendent of the State Hospital, and Dr. Weston Cook of Columbia.

Approximately 200 doctors and attorneys attended the meet at the Andrew Jackson Hotel.

For the first time in many years Varnville has a resident physician. He is Dr. Josiah Thompson, an Augusta native.

He came here from Ridge Springs, where he practiced medicine for the past three years. He attended the University of Georgia and the University of Georgia School of Medicine, being graduated from the Medical College in 1948.

He served his internship at the Columbia Hospital in Columbia, and during 1951-52 served in the Army Medical Corps in the U. S. and Korea.

A proposal to enlarge the Medical College Hospital was introduced in the General Assembly on March 6.

The bill, sponsored by the Senate Medical Affairs Committee, would authorize the Medical College Board of Trustees to negotiate with the federal government to obtain funds under the Hill-Burton act for the construction.

Committee Chairman William P. Baskin, of Lee County, said plans were for adding four stories to the hospital for research facilities for heart and other diseases. The bill says these facilities "are now inadequate."

Baskin said it was estimated the construction would cost approximately $3,000,000.

In Charleston, Dr. Kenneth M. Lynch, president of the college called the introduction of the bill encouraging.

"We've been looking forward to the addition for a long time," he said, "and this is the first of a number of steps that must be taken."

Dr. Thomas Pitts, a member of the boards of directors of both the Richland County and South Carolina American Cancer Society organization, was moderator of a panel discussion on cancer detection and therapy at an area meeting of county units from central South Carolina.

Other physicians participating in the medical roundup were Dr. Garrison Latimer, whose topic was "The Value of Regular Check-ups in the Early Detection of Cancer," Dr. George Brunson, who spoke on "The Use of X-Rays in the Early Detection of Cancer," and Dr. Richard Allison, Jr., who discussed "Early Detection of Skin Cancer."

Dr. Carl A. West, for more than a score and half years a leading practitioner and surgeon of Camden, was recently presented with the Distinguished Service Plaque by the J. Leroy Belk Post of the American Legion.

The fourth annual Medical Forum series sponsored by the Greenville County Medical Society was inaugurated in March on WFBC-TV when three physicians answered questions about polio as submitted by the general public.

Physicians engaged in general practice of medicine, internal medicine, and orthopedics composed the panel for this initial program. They are Dr. Robert C. Grier, Jr., orthopedic surgeon; Dr. McMurry Wilkins, Jr., internal medicine, and Dr. J. G. Murray, Jr., general practitioner.

Lonita Boggs, M. D. and R. W. Penick, M. D. announce their association in the practice of pediatrics, 18 Medical Court, Greenville.

Dr. Malcolm U. Dantzler, a 1948 graduate of the Medical College of South Carolina, has been appointed assistant health director of the Charleston County Health Department effective around the first of June.

Now in training for a degree in public health at the University of North Carolina, Dr. Dantzler also will take over the duties of Dr. Louis E. FitzSimons, clinician for the Charleston County Health Department, who retired April 6.

Dr. Dantzler has been health officer for Marion and Dillon Counties and has served on the central administration of the State Board of Health.

Dr. Julian P. Price of Florence has taken his place as a member of the newly-appointed Public Health Service Advisory Committee on Medical Practice Relations.

The Florence doctor is one of seven physicians picked by Surgeon General Leroy E. Burney to advise him on Public Health Service activities related to the practice of medicine.

On Wednesday, March 13th, Mr. David C. Dick, Director of External Affairs and Mr. A. C. Starin, Director of Administration of the South Carolina Blue-Cross - Blue Shield Plan, visited in Beaufort. Mr. Dick addressed the Rotary Club at their luncheon and that evening they joined in a roundtable discussion with the Medical Staff of the hospital and the Administrator.

The Army's Office of Dependent Medical Care, handling the new program that offers private medical care to service families, is working on some long— and some short-range plans of importance to state societies.

To meet a problem coming up in the next few months, the office is notifying states that contracts for physicians' services, negotiated through the state societies last fall, will be extended automatically when their expiration date of July 1 arrives. However, there

is no definite time period set for any of the extensions; each contract will be continued in effect until that particular state's agreement has been renegotiated.

When the contract is extended, according to Maj. Gen. Paul I. Robinson, head of the Office of Dependent Medical Care, it will be possible to make necessary adjustments, but he hopes not too many changes will be asked at that time.

Then, after July 1, each state will be given 60 days' notification before Defense Department makes its final audit covering the period from December 7, 1956, when the program went into effect, through June 30, 1957. This audit has been promised in each state before renegotiation starts.

Both the state fiscal agents and Gen. Robinson's staff should be well prepared for renegotiations when the time arrives. No renegotiations will be undertaken until January, 1958. They will continue for most of next year, on a tentative schedule that calls for handling about five contracts per month.

Under this tentative arrangement, the contract with the South Carolina Medical Association will be renegotiated during the month of October.

At the annual meeting of the Huguenot Society of South Carolina on April 11 in Charleston the guest speaker was Dr. Chapman James Milling, Columbia physician, author, and poet.

Dr. Milling discussed the Acadians and Santo Domingans, French refugees who followed the Huguenots to South Carolina. He has written a book on the Acadians and has made a hobby of studying folklore and history of the state of South Carolina.

Among his books are "Singing Arrows," a collection of poems; "Exile Without End," the story of the Acadians; "Red Carolinians," an Indian history, and, in collaboration with photographer Carl Julien, a photographic book of South Carolina, "Beneath So Kind a Sky."

Dr. S. O. Schumann recently opened his office in St. Stephen. Dr. Schumann has been practicing at Russellville for the past two and a half years.

Dr. Ruth Smith Johnson of Columbia has become a member of the medical staff of the South Carolina State Hospital.

Doctor Johnson was engaged in the private practice of pediatrics in Florence, prior to coming to Columbia where her husband, Dr. Elbert N. Johnson, Jr, is a physician at the U. S. Veterans Hospital.

On April 16-18 a three-day post-graduate seminar was held at Greenville General Hospital.

The meeting was sponsored by the General Practice Division of the hospital's medical staff.

Instructors were Dr. Edgar Hull, department of medicine of Louisiana State University; Dr. P. C. Gazes and Dr. K. T. McKee, department of medicine, Medical College of South Carolina, and Dr. Jack Paul, department of pediatrics, Medical College of South Carolina.

Dr. W. N. Cochran of Spartanburg and Dr. Claude Frazier, of Asheville, N. C., as well as a number of Greenville doctors took part in discussions.

ANNOUNCEMENTS

VIROLOGY SERVICE NOW AVAILABLE

The Laboratory of the State Board of Health is now performing complement fixation tests and tissue culture work for a limited number of viral and rickettsial diseases, according to Dr. G. S. T. Peeples, State Health Officer. A satisfactory polio antigen is not available at present; however, tissue culture work is being done on stool specimens of suspected cases of polio.

Two specimens of sera must be submitted for viral diseases. The first specimen should be collected during the acute phase of the disease and the second specimen collected two to four weeks later, during the convalescent phase of the disease. Physicians submitting specimens for virus work should communicate with the laboratory for information form and suggested procedures for collecting and mailing specimens.

Post-Session tours to Europe and Bermuda are being offered A. M. A. members following the Association's Annual Session in New York City, June 3-7, 1957. Two European tours are offered—one of 24 days to France, Italy, Switzerland, Belgium, and France, and one of 38 days, visiting England, Belgium, Holland, Germany, Switzerland, Austria, Italy and France.

In cooperation with the World Medical Association, special scientific sessions of exceptional interest have been planned in London, Paris and Geneva.

In addition to Europe, the post-session program includes three trips to Bermuda, designed for those who may not have sufficient time for a European vacation. One trip is five days long—the other eight days, with an opportunity to make the round trip by air, or go one way by air and one way by steamer.

The film "Urine Sugar Analysis for Diabetics", developed in cooperation with the medical profession, is available at no charge to the Medical and Allied Professions through Ames Company, Inc.

The film was made as a visual aid to be used in the education of diabetic patients and shows the relationship between carbohydrates and insulin. It also explains in lay language the meaning of various diabetic conditions. It has been produced on 16 mm. film in color and sound track with a running time of approximately 10 minutes. Appropriate "hand-out" literature accompanies the film.

Showings at diabetic clinics, diabetic lay societies and other diabetic groups must be requested by the medical or allied professions to Ames Company, Inc., Elkhart, Indiana or an Ames representative.

A full-time eight-week course in Occupational Medicine, designed for physicians engaged in the practice of medicine in industry, is being offered from September 16 through November 8, 1957, by the New York University Post-Graduate Medical School.

For further information write: Office of the Associate Dean, NYU Post-Graduate Medical School, 550 First Avenue, New York 16, N. Y.

The American-Korean Foundation and the United States Army Medical Service have announced the discontinuation of their joint project of shipping medical books contributed by individual physicians, medical schools, hospitals and state and local medical societies to Korea.

Books should not be sent to the Sharpe General Depot in California as in the past for facilities no longer exist for packing and transshipping to Korea.

In making the announcement, Howard A. Rusk, M. D., President, American-Korean Foundation said, "the response of physicians and medical groups throughout the country for our appeal for books for Korean medical schools has been so generous that further contributions are not needed." As a result of this program, Dr. Rusk stated, over 77 tons, valued at $76,000, of medical texts, references and periodicals have been shipped to Korea for distribution to Korean medical schools.

Approved residencies in Physical Medicine and Rehabilitation available at New York University-Bellevue Medical Center beginning July 1, 1957. American graduates with approved internships eligible for OVR Fellowship, starting at $3,400.00 per year with added dependency allotment. Make immediate application to: Joseph G. Benton, M. D. Institute of Physical Medicine and Rehabilitation, 400 East 34th Street, New York 16, N. Y.

A post-graduate course on "Fractures in General Practice" will be held from June 13th through June 15th, sponsored by the Medical College of Georgia Foundation, Inc. and the Medical College of Georgia. The majority of the members of the faculty for this course will be the orthopaedic surgeons connected with the Medical College of Georgia and the orthopaedic staff of the University Hospital. The guest participant will be Dr. Chalmers R. Carr, formerly Chief of the Orthopaedic Service at the United States Navy Hospital and the National Naval Medical Center, Bethesda, Maryland, who is now Associate at the Miller Orthopaedic Clinic, Charlotte, N. C.

This course is limited to twenty physicians and the tuition fee is $25.00. It has been approved by the American Academy of General Practice for twenty (20) credit hours, Category I.

Application for attending this course should be made to Dr. V. P. Sydenstricker, Dean of Postgraduate Medical Education, Medical College of Georgia, Augusta, Georgia.

AMA PLANS OUTSTANDING MEDICAL MEETING IN JUNE

Physicians attending the AMA's 106th Annual Meeting in New York City June 3-7 will find a star-studded revue of exhibits, scientific lectures, medical films and color television programs lined up for their pleasure and enlightenment. Approximately 18,000 physicians from all over the country are expected to participate in this world-famous "short course" in post-graduate medical education. Focal point of the scientific program will be the Coliseum—New York's new exhibition hall—with four floors devoted to technical and scientific exhibits, many of the scientific meetings and the color television program. A number of section meetings plus the scientific film program will be held in hotels near the exhibit hall. Headquarters for the House of Delegates will be the Waldorf Astoria.

An outstanding scientific lecture program is being arranged by the Council on Scientific Assembly.

HARVEY TERCENTENARY CONGRESS 1957

June 3rd — June 7th

At The Royal College of Surgeons, London

The Tercentenary of the death of William Harvey (1578-1657) will be commemorated by an International Congress on the Circulation. The main theme will be:—

"A REVIEW OF THE PRESENT KNOWLEDGE OF THE CIRCULATION"

MOUNT SINAI HOSPITAL OF GREATER MIAMI SEVENTH ANNUAL POST-GRADUATE SEMINAR

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Recent Advances in Diagnosis and Therapy

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Voluntary health insurance now pays more than 25 percent of the total annual expenses for all personal health services incurred by both insured and uninsured persons in this country, Health Information Foundation reports.

DEATHS

DR. G. R. CAUDLE

Dr. G. R. Caudle, 70, practicing physician, died at his home on March 12.

He was born in Anson County, N. C. He attended Davidson College and was a graduate of the Medical School of North Carolina, class of 1910. He did post-graduate work at the Medical College of South Carolina. He began the practice of medicine at Mauldin and continued his practice in Greenville County until the time of his death.

DR. J. D. BEARDEN

Dr. J. D. Bearden, 70, well known physician of Central, died at his residence on March 8.

Dr. Bearden was born in Spartanburg County and was graduated from the Medical College at Charleston in 1912.

For the past 44 years he had made his home in Central, where he did general medical practice.

He was a veteran of World War I and was stationed at Camp Lee, Va., as a first lieutenant.

DR. JOE NORTON LAND

Dr. Joe Norton Land, pioneer physician in this area, died March 6 at Anderson Memorial Hospital, where he was chief surgeon for many years.

A native of Oconee County, Doctor Land had practiced for 39 years before his retirement for reasons of ill health.

A graduate of the medical school of the University of the South, Sewanee, Tenn., he had served his internship at Emory Hospital at Atlanta.

DR. WILLIAM ALBERT WHITLOCK

Dr. William Albert Whitlock, Sr., 90, formerly of Salley died on February 24 at an Anderson infirmary after an illness of three weeks.

Dr. Whitlock was a native of Edgefield County. He practiced medicine over 50 years, most of that time in the Kitchings Mill section of Aiken County. Highly regarded in his profession, Doctor Whitlock possessed a large practice and was held in respect by a wide acquaintance. He retired five years ago.

DR. JAMES CHISOLM HILL

Dr. James Chisolm Hill, 75, Abbeville's oldest practicing physician, died at his home recently.

He attended Georgia Tech and graduated from the University of Maryland where he received his medical degree in 1906.

He was associated with his father in the practice of medicine until his father's death. It was largely through his efforts that the William's Academy Building was purchased in 1920 and converted to the Abbeville County Memorial Hospital. He served as a medical officer during World War I and as a staff physician for the Seaboard Air Line Railway for over 40 years.

He was a member of the American Medical Association, South Carolina Medical Association, Abbeville County Medical Society and was on the staff of Abbeville County Memorial Hospital.

DR. DRAYTON DUNCAN KINARD

Dr. Drayton Duncan Kinard of 137 West Hampton Avenue, died in Spartanburg General Hospital on February 21 after a long illness.

Dr. Kinard was a native of Ninety Six and was a retired eye, ear, nose and throat physician. He was a member of the South Carolina Medical Association and the American Medical Association. He was a graduate of the Medical College of South Carolina, New York Eye, Ear, Nose, and Throat Hospital, and did further post-graduate work at Johns Hopkins. He practiced in Greenwood for a number of years before coming to practice in Spartanburg.

DR. LEWIS ROY POOLE

Dr. Lewis Roy Poole, 57, prominent Easley doctor, died at a Greenville hospital after an eight months illness.

Dr. Poole was born in Traveler's Rest and received his early education there. After attending the University of South Carolina he entered the Medical College of South Carolina and graduated in 1925. For a short time he served as public health officer in Dothan, Ala., and later went to Duncan Hines Hospital in Chicago for 1½ years.

In 1932 Dr. Poole began general practice in Easley where he remained until 1941 when he entered the Air Force as a medical officer, returning to his practice in 1945. Dr. Poole was a member of the American Academy of General Practice, and a charter member of the Easley Rotary Club. He was a member and former deacon of the Easley Presbyterian Church.

DR. ROBERT T. McGOWAN

Dr. Robert T. McGowan, 64, surgeon and physician of Laurens, died at the Laurens County Hospital February 11, 1957 after an illness of several months.

He was born at Cross Hill and was a graduate of University of South Carolina and the Medical College of Emory University. He served his internship at Polyclinic Hospital in New York City and served in both World Wars I and II as lieutenant colonel. He was a member of the First Presbyterian Church, a Shriner and a member of the South Carolina National Guard.

In the past eight years, the proportion of the nation's total medical expenses met by voluntary health insurance has increased three times as fast as the proportion of Americans holding such insurance, according to Health Information Foundation.

BOOK REVIEWS

FUNDAMENTALS OF CLINICAL FLUOROSCOPY. By Charles B. Storch, M. D., pp. 305, $8.75. Grune & Stratton, New York, 1957.

As the author points out in the preface, the purpose of this book is to aid the student in the supervised study of fluoroscopy. It is not intended that this book replace the practical personal teachings of a trained fluoroscopist which are most necessary to gain proficiency in fluoroscopy. However, the information offered will make this period of training easier and more profitable. The guidance is accomplished through complete and clear discussion of the routines used in fluoroscopic examinations. A discussion of the demonstration and interpretation of the abnormal findings in the more common diseases follows. Many clear and instructive illustrations are used. All of the frequently used examinations with the exception of myelography are included and there is a section on protection and mechanics.

Frank Gruber, M. D.

PRINCIPLES OF CLINICAL ELECTROCARDIOGRAPHY. By Mervin J. Goldman, M. D. Assistant Chief of the Medical Service and Cardiologist, Oakland Veterans Administration Hospital, Oakland. Assistant Clinical Professor of Medicine, University of California School of Medicine, San Francisco. Lange Medical Publications, Los Altos, California, 1956. Price $4.50.

With the numerous books now available on electrocardiography the ECG must surely qualify as our most written about laboratory procedure. Virtually all of them follow a conventional format starting with instrumentation and electrophysiology and progressing on through the normal and then the abnormal electrocardiographic patterns and their interpretation. This new volume is organized in the same way but differs conspicuously in one respect: it is far more abundantly illustrated. Actually, well over half the space is devoted to diagrams and electrocardiographic tracings which are blended in such a way as to make the latter almost self-explanatory. Such text as is included is set forth in more or less outline form with a minimum of discussion. The net result is a most graphic and readable treatment of the ECG, with emphasis on points of clinical interest particularly suited to the busy practicing physician.

The author is a cardiologist with an obvious knack of stating things clearly and concisely. One might like to see a few controversial points presented with a little less finality. But to some extent this tendency is attributable to over-simplification which helps rather than hinders the beginner in the field. On the basis of wealth of illustrative material alone this book is a valuable addition to the library of any physician who seeks to understand and interpret electrocardiograms in the light of the newer concepts which stem from the contributions of Wilson and others, and use of the unipolar leads.

Dale Groom, M. D.

CLINICAL MEMORANDA ON ECONOMIC POISONS By U. S. Dept. of Health, Education and Welfare. 78 pages. Reproduced by and available from National Agricultural Chemicals Association, Washington, D. C.

This small book presents briefly information upon each of the poisons generally used as pesticides. For each poison is given its chemical name and formula, formulations, uses, physiological action, acute and chronic doses, signs and symptoms of poisoning, laboratory findings, pathology, differential diagnosis and treatment. This book should be of great value to all physicians called upon for emergency work.

Wm. McCord, M. D.

THE PHYSICIAN-WRITER'S BOOK—Trick of the Trade of Medical Writing. Richard M. Hewitt, A. M., M. D. Univ. of Minnesota. W. B. Saunders, Philadelphia, 1957. Price $9.00.

There are available a number of good books which have to do with the composition of scientific papers and which offer explicit directions on form of arrangement and usage of words. Most of them are of the handbook variety, and offer excellent advice, much of which seems to be disregarded by our current writers. A new book on these subjects is welcomed with the hope that it shall be widely read and utilized, especially since it comes from the hand of a man who has had very extensive experience in matters of teaching, writing, and editing, and who approaches the subject with enthusiasm and humor.

The purpose of the book is to promote better writing, and the arrangement is such as to lead the reader comfortably through the mazes of medical composition. The text is very readable, informal, inviting. It can be recommended to anyone who has to do with medical writing.

J.I.W.

ULTRA MICRO METHODS FOR CLINICAL LABORATORIES. By Edwin M. Knights, Jr., M. D., Ronald P. MacDonald, Ph. D., Joan Ploompun. 128 pages. Greene and Stratton, New York, N. Y. 1957.

The authors of this small book have satisfied a definite need for information on micro-clinical chemistry. The first three chapters describe methods, procedures and sources of special micro equipment. The next seventeen chapters are devoted to special determinations on a micro scale. This book is indispensable to the clinical laboratory.

Wm. M. McCord

CHILD BEHAVIOR. Frances L. Ilg, M. D. and Louise B. Ames, Ph. D. New York. Dell Publishing Co. 1957. Price 35 cents.

The work of Dr. Ilg and Dr. Ames at the Gesell Institute is too well known to require comment, except to say that it represents much valuable contribution to our knowledge of child behavior. The noteworthy matter is that a book previously available in relatively expensive form is now to be had at any bookstand by any parent who has the sum of thirty-five cents and a reasonable concern about the behavioral development of children. It may be hoped that a copy may be in every home in which children grow up with their inevitable problems.

J.I.W.

PHYSIOLOGIC PRINCIPLES OF SURGERY. Edited by Leo M. Zimmerman and R. Levine. 50 collaborators. 988 pages. W. B. Saunders Co., Philadelphia. Price $15.00.

An important characteristic of present day surgery is consideration of the patient as a whole in a dynamic sense. The term of "physiologic principles" covers a broad spectrum of medical disciplines including chemistry, bacteriology, endocrinology, therapeutic pharmacology and hematology, not to mention a necessary sprinkling of anatomy and operative surgery for orientation. This book illustrates quite well how firmly interdependent these various approaches to the study of the patient have become.

The chapters are well arranged with remarkably little overlap of material or contradiction of opinion. The subject matter in each chapter is well presented in an easily understandable manner. Each chapter contains selected references to current literature, some fairly extensive. Included in these references are the papers which have received most recognition in the particular field. The illustrations are not profuse in some areas but most of them are simple and to the point. The index is adequate and any item of interest can be located readily.

This type of book has become very important to the surgeon as much emphasis has been placed on physiology in surgery during the last two decades. A good understanding of physiology has become a necessity. This book can be recommended for the practitioner, the house officer and the medical student as an up-to-date report on the present status of a rapidly expanding field.

Fred Kredel, M. D. and R. R. Bradham, M. D.

DISEASES OF THE BREAST, by C. D. Haagensen, M. D. 723 pp. W. B. Saunders Co., 1955. Philadelphia—Price $16.00.

The appearance of this book devoted to the clinical aspects of breast disease is welcome. The author is eminently qualified to produce the work, having had an abiding interest in breast disease and wide recognition for his contributions to the knowledge of such disease. There is detailed consideration of the anatomy and physiology of the breasts, the methods of diagnosis and the difficulties to which the breast is subject, ranging from hypertrophy to malignancy. The first person method of presentation detracts from the book in the reviewer's opinion.

More than one-half of the book deals with cancer of the breast. The author's views on some of the current problems in mammary cancer are interesting. The author continues to favor radical mastectomy over McWhirter's recent application of x-ray along with partial mastectomy as primary treatment for breast malignancy. Haagensen believes that the one fact that is outstanding in a critical comparison of radical mastectomy and primary roentgen therapy is that the radiotherapeutists have not presented data as yet to prove that they can achieve a 5 or 10 year survival rate which can approach the author's current rate. Another facet of interest concerns a reevaluation of the author's presentation in 1951 of his criteria of operability in association with Dr. A. P. Stout. His data at that time showed that certain signs of advancing carcinoma of the breast would pronounce the lesion as categorically inoperable. His criteria of operability have been strongly criticized as much too pessimistic. One of his categorically inoperable groups was carcinoma occurring with pregnancy or lactation. The attack against his criteria was strongest at this point. It is interesting to note that the author has retrenched and yielded this point, having found that 10 of their 31 cases are 5 year clinical cures. Such a discovery prompts him to admit that the ideal of preoperative criteria which will exclude all incurable patients has not been achieved. His continuing search for that ideal is praiseworthy. At the present time, he is using in selected cases biopsy of the internal mammary nodes, the apex of the axilla and the supraclavicular nodes as aids in determining operability.

As a source of reference, this work will be a valuable addition to the library of the physician who is daily involved with problems of breast disease. The minute treatment of the data is not likely to appeal to those at the level of general training or to the casually interested.

Louie B. Jenkins, M. D.

According to Health Information Foundation, the average American incurred total charges of $71.50 for medical care and services in 1956. In the same year, the average person covered by voluntary health insurance received benefits of $27.

The American people spent more than $11.8 billion for personal health services during 1956, Health Information Foundation reports. More than 25 percent of this sum, or almost $3 billion, was covered by voluntary health insurance.

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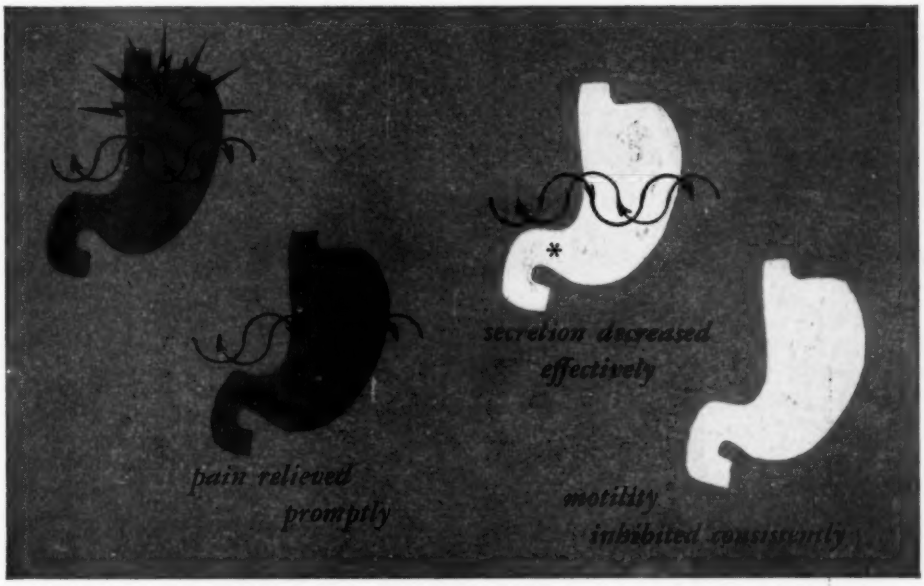
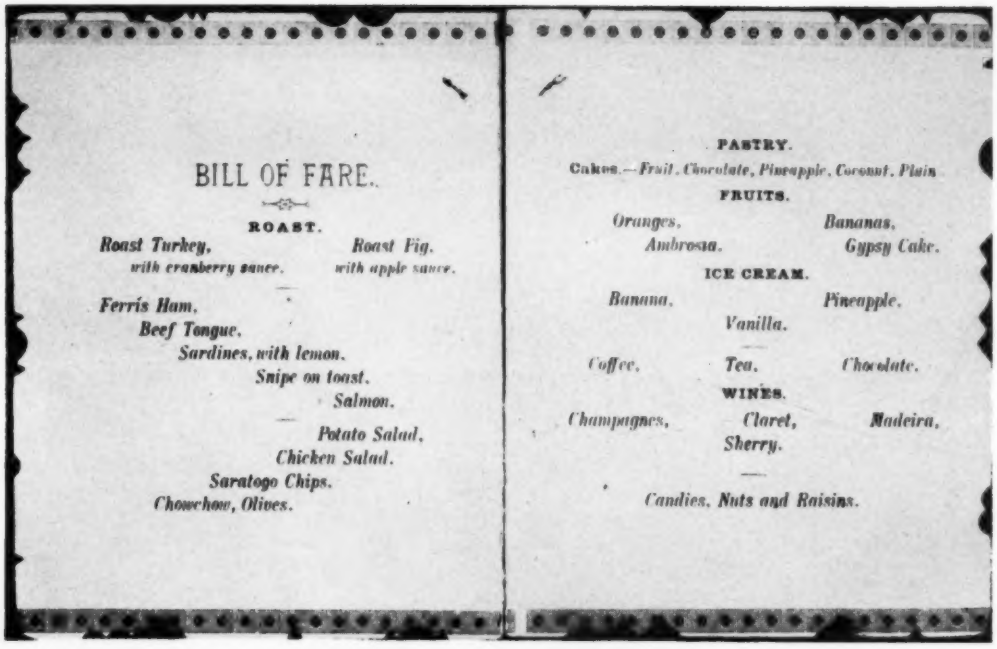


Among the many clinical indications for Pro-Banthine (brand of propantheline bromide), peptic ulcer is foremost. During treatment, Pro-Banthine has been shown repeatedly to be a singularly valuable agent when used in conjunction with diet, antacids, sedation and psychotherapy as required. Lichstein and his associates* report that Pro-Banthine "proved almost invariably effective in the relief of ulcer pain, in depressing gastric secretory volume and in inhibiting gastrointestinal motility. The incidence of side effects was minimal. . . ."

The therapeutic utility and effectiveness of Pro-Banthine in the treatment of peptic ulcer are repeatedly confirmed in the medical literature. Dosage: One tablet with each meal and two tablets at bedtime. G. D. Searle & Co., Chicago 80, Illinois, Research in the Service of Medicine.

*Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: Pro-Banthine in the Treatment of Peptic Ulcer. A Clinical Evaluation with Gastric Secretory, Motility and Gastroscopic Studies. Report of 60 cases, Am. J. M. Sc. *232*:156 (Aug.) 1956.

SEARLE



BILL OF FARE.

ROAST.

Roast Turkey, with cranberry sauce. *Roast Pig,* with apple sauce.

Ferris Ham,
Beef Tongue,
Sardines, with lemon,
Snipe on toast,
Salmon.

Potato Salad,
Chicken Salad,
Saratoga Chips,
Chowchow, Olives.

PASTRY.

Cakes.—*Fruit, Chocolate, Pineapple, Coconut, Plain.*

FRUITS.

Oranges, Bananas,
Ambrosia. Gypsy Cake.

ICE CREAM.

Banana, Pineapple,
Vanilla.

Coffee, Tea, Chocolate.

WINES.

Champagnes, Claret, Madeira,
Sherry.

Candies, Nuts and Raisins.

This Is The Way It Was In The Old Days.